PRELIMINARY ENVIRONMENTAL ASSESSMENT

Silver State Off-Highway Vehicle Trail

EA NV-040-07-43

Bureau of Land Management

Ely Field Office

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June 2007

Table of Contents

1. Background Information

1.1 Introduction

The Silver State Off-Highway Vehicle Trail – Lincoln Section was designated on November 30, 2004 by Title IV of Public Law 108-424, the Lincoln County Conservation, Recreation and Development Act (LCCRDA). The Trail covers approximately 260 miles of established roads and maintained or established two-tracks from Patterson Pass on the northern end of the Trail to just north of Highway 93, west of Caliente on the southern end of the Trail.

The Bureau of Land Management (BLM) prepared this environmental assessment (EA) pursuant to the Code of Federal Regulations (CFR), implementing the National Environmental Policy Act (NEPA). The EA analyzes the site-specific impacts of two alternatives, the Proposed Action and a No Action alternative. The analysis of the Proposed Action contained in this EA would be sufficient for adaptive management decisions until the Proposed Action and/or land management issues change as to require new NEPA analysis.

The BLM proposes to make changes and additions to the Silver State Off-Highway Vehicle (OHV) Trail – Lincoln Section as it was designated by Congress for the purposes of resource protection, user safety, convenience and enjoyment of recreational opportunities.

This document identifies issues, analyzes alternatives and discloses anticipated impacts for the Silver State OHV Trail – Lincoln Section and the proposed alterations to the original trail designation.

1.2 Purpose of and Need for Action

The need for the Proposed Action is to manage the Silver State Off-Highway Vehicle Trail – Lincoln Section, hereafter referred to as "the Trail," to meet the requirements of LCCRDA and to meet the demands of current and projected future use of the Trail.

The purpose of the Proposed Action is to meet the following objectives, listed in order of priority:

- To avoid damage to sensitive natural and cultural resources on and around the Trail;
- To provide for user safety;
- To provide convenient access to and usage of the Trail;
- And to provide for increased enjoyment of recreational opportunities.

1.3 Relationship to Laws, Regulations and Plans

The Proposed Action is guided by the following laws and regulations:

- The Migratory Bird Treaty Act of 1918, as implemented by the Ely District Policy Management Actions for the Conservation of Migratory Birds in accordance with Executive Order 13186.
    - This policy states that there is a "'no activity' period for all management actions in migratory bird habitat" from May 1 to July 15 "unless a survey is done to determine no migratory bird breeding or nesting is occurring in the area.
- The Endangered Species Act of 1973
- The Federal Lands Management Policy Act (FLPMA) of 1976
- Lincoln County Conservation, Recreation and Development Act of 2004
- The Fundamentals of Rangeland Health (43 CFR 4180.1)

This Proposed Action has been reviewed for conformance with the following plans and guidelines as required by 43 CFR 1610.5 and BLM MS 1617.3:

- Lincoln County Policy Plan for Public Lands (December 5, 1984)
    - This plan states that "opportunities for unstructured recreation such as camping, fishing, hunting and four-wheeling in Lincoln County on public lands should continue to be made available." It further states that "use of OHVs on public lands needs to be managed to minimize negative environmental impacts."
- Lincoln County Public Land and Natural Resource Management Plan (December 5, 1997)
    - This plan states that "public lands will be managed for the benefit of its own citizenry while welcoming the constructive development of recreational activities and the beneficial use of other natural resources."
- Caliente Management Framework Plan (July 14, 1980)
    - This plan directs the agency "to designate specific areas and trails on public lands on which the use of off-road vehicles may be permitted."
- Caliente Management Framework Plan Amendment and Record of Decision for the Management of Desert Tortoise Habitat (September 2000)
    - There are no proposed routes within Desert Tortoise Areas of Critical Environmental Concern (ACECs).
- Ely BLM Field Office Recreation Plan (March 2003)
    - This plan identifies the need to "properly manage an OHV program," including the development of OHV use areas with trailheads and public access points.
- Lincoln County Elk Management Plan (2004)
- Lincoln County Sage Grouse Plan (2004)
- Ely BLM Field Office Recreation Plan (2003)
- Northeastern Great Basin and Mojave/Southern Great Basin Resource Advisory Council Standards and Guidelines

- Meadow Valley/Clover Creek Watershed Management Plan (June 17, 2000)
- Nevada Northeastern Great Basin Resource Advisory Council "OHV Administration Guidelines for Nevada Public Lands"
- National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands (BLM 2001)

1.4 Scoping and Issues

1.4.1 Scoping

Scoping was done internally with environmental resource specialists and externally with a technical review team (TRT) set up by the Lincoln County Coordinated Resource Management Steering Committee. TRT meetings were held on May 25, 2005, June 30, 2005, January 22, 2007 and April 24, 2007. TRT meetings were attended by representatives of the following organizations:

- Lincoln County Commission
- Nevada Archaeological Association, Lincoln County Chapter
- Dunes and Trails ATV Club
- Red Rock Audubon Society
- Lincoln County Trails Coalition
- Pioneer Territory Tourism
- Nevada State Parks
- Motorcycle Racing Association of Nevada
- Groundshakers Motorcycle Club
- Nevada Department of Wildlife

Additionally, two public meetings were held on May 15, 2007 and May 29, 2007.

1.4.2 Issues

The scope of the issues analyzed in this EA is limited to the need for the Proposed Action and the four objectives outlined in the purpose of the Proposed Action (see Section 1.2).

Issues of primary importance identified during the internal and external scoping process for the Trail include:

- Air quality
- Riparian areas and wetlands
- Soil disturbance and erosion
- Vegetation disturbance
- Fire management
- Invasive and noxious weed control
- Livestock grazing and range improvement management
- Wild horses and horse habitat
- Wildlife, migratory birds, special status species and habitat
- Archaeological resources and historic properties

- Mining claims, oil and gas leases and gravel pits
- Private property and rights of way
- Wilderness characteristics
- Visual resources
- Recreation

Issues considered during the scoping process for which it was determined that resource impacts would not occur include:

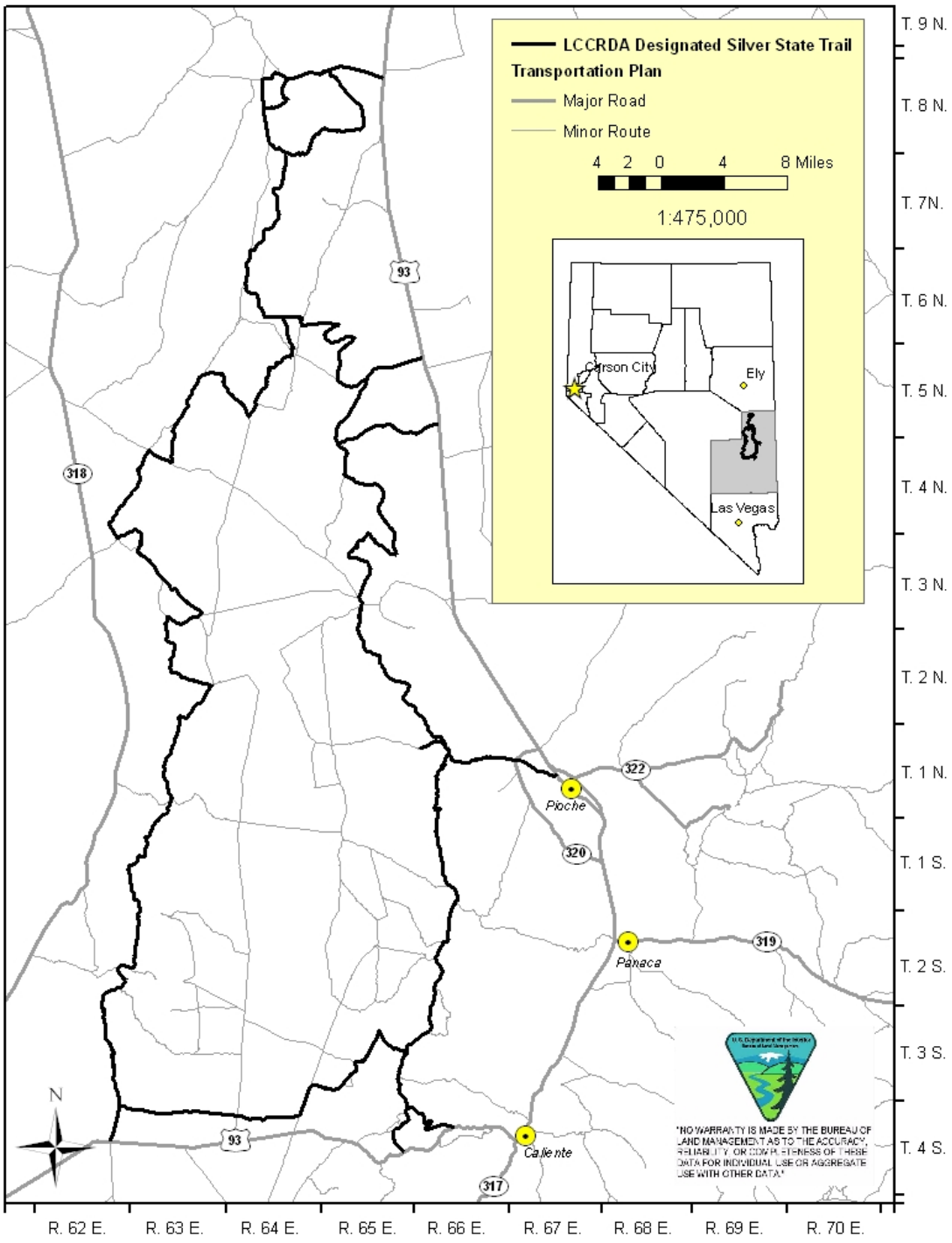
- Floodplains
- Native American religious concerns
- Water quality for drinking water and groundwater
- Areas of Critical Environmental Concern

2. Description of the Proposed Action and Alternatives

This chapter presents two alternatives for management of the Trail, including the Proposed Action and a No Action alternative. Included is a description of the degree to which each alternative would meet the following objectives (listed in order of priority), set forward by LCCRDA:

- To avoid damage to sensitive natural and cultural resources on and around the Trail;
- To provide for user safety;
- To provide convenient access to and usage of the Trail;
- And to provide for increased enjoyment of recreational opportunities.

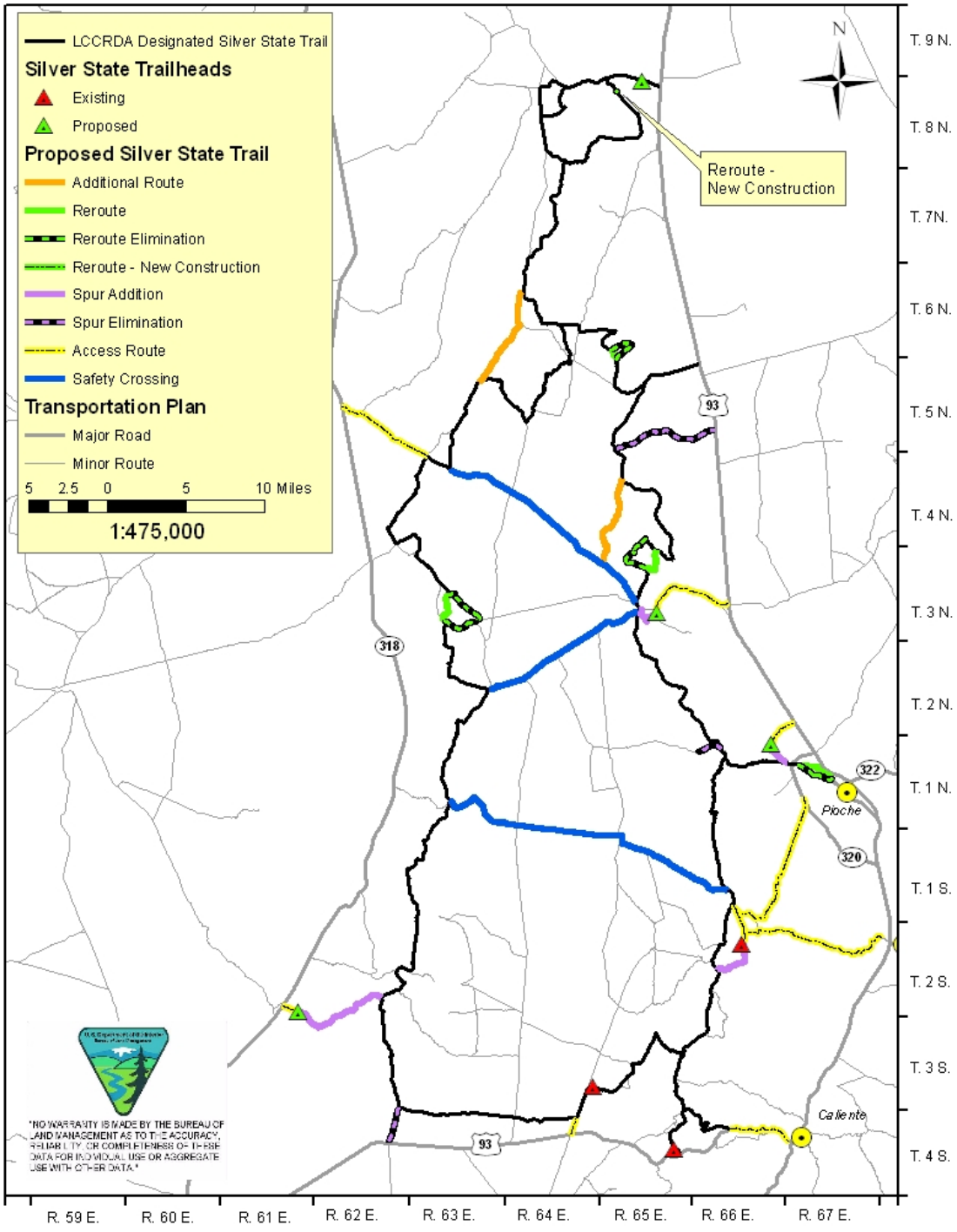
Map 1. The Silver State Trail, as Proposed by the Lincoln County Conservation, Recreation and Development Act of 2004



2.1 Proposed Action

The Proposed Action is designed to meet all of the objectives of LCCRDA, and it allows for proactive, adaptive management of the Trail in order to protect natural and cultural resources. This alternative would allow for the construction of a short section of road and trail to avoid having Trail users drive through a riparian area, as well as improvements for water crossings to protect downstream riparian areas. It would also provide safety crossings, spurs and access roads in order to encourage Trail users to stay on these routes instead of dispersing their impacts to resources throughout the region of the Trail. The Proposed Action would provide for user safety by rerouting sections of the Trail away from hazards, such as high-speed traffic and abandoned mine pits. It would also provide for convenient access to and usage of the Trail by designating access routes to reach trailheads, spurs to connect trailheads to main sections of the Trail and signage to clearly direct Trail users to their desired destinations. To provide for increased enjoyment of recreational opportunities, the Proposed Action would reroute some sections of Trail to existing roads that would be more enjoyable to ride and include practice areas at all trailheads.

Map 2. The Proposed Action



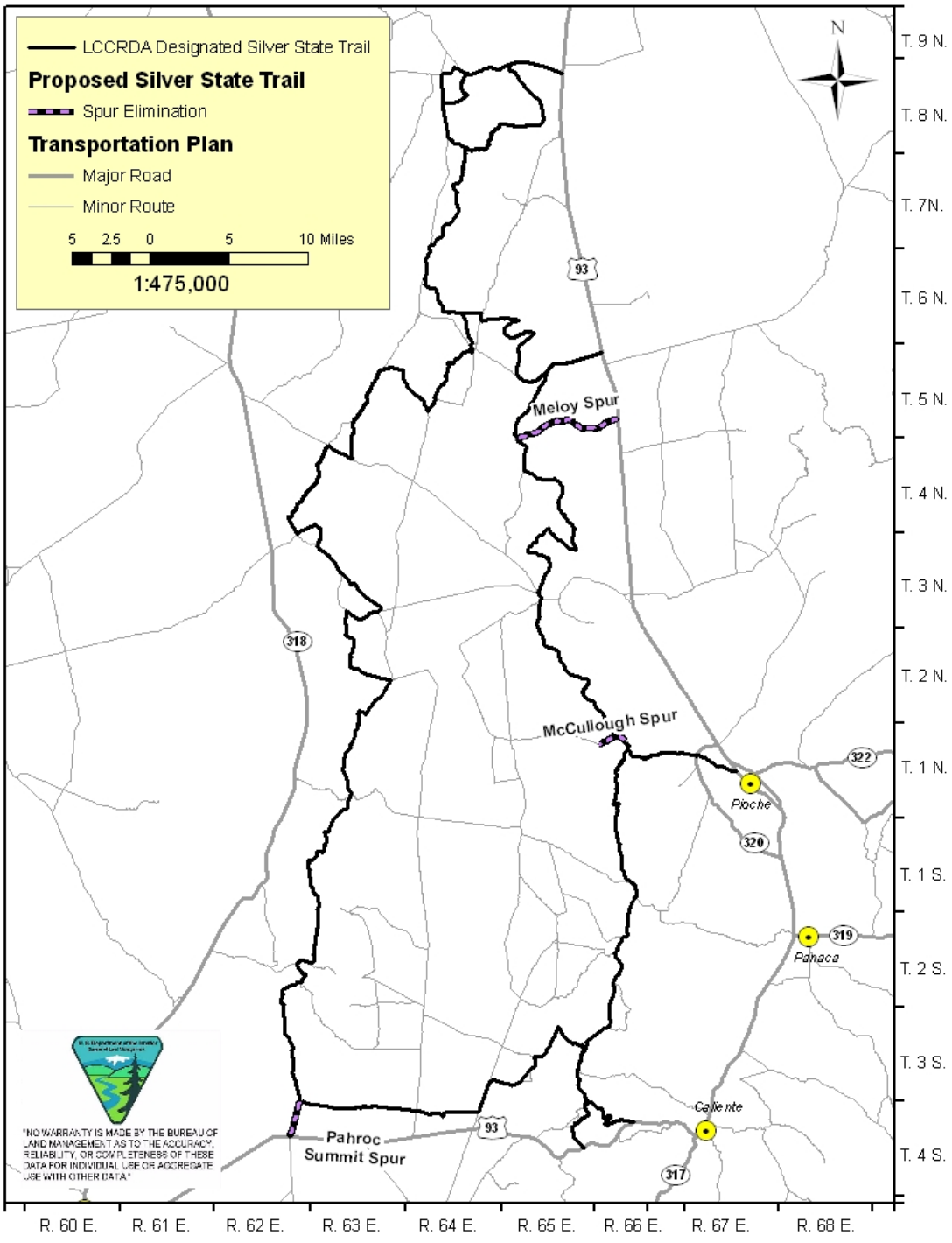
2.1.1 Eliminations of Designated Sections of Trail

The McCullough Spur would be removed from the Trail because it is an unnecessary section of trail that does not provide additional access to any other parts of the Trail.

The Pahroc Summit Spur would be removed from the Trail because its removal would discourage use in an area where sensitive natural and cultural resources are concentrated and where user conflicts are likely to occur.

The Meloy Spur would be removed from the Trail because it is a redundant section of Trail that runs through private property, and its elimination would avoid potential conflicts with private property owners.

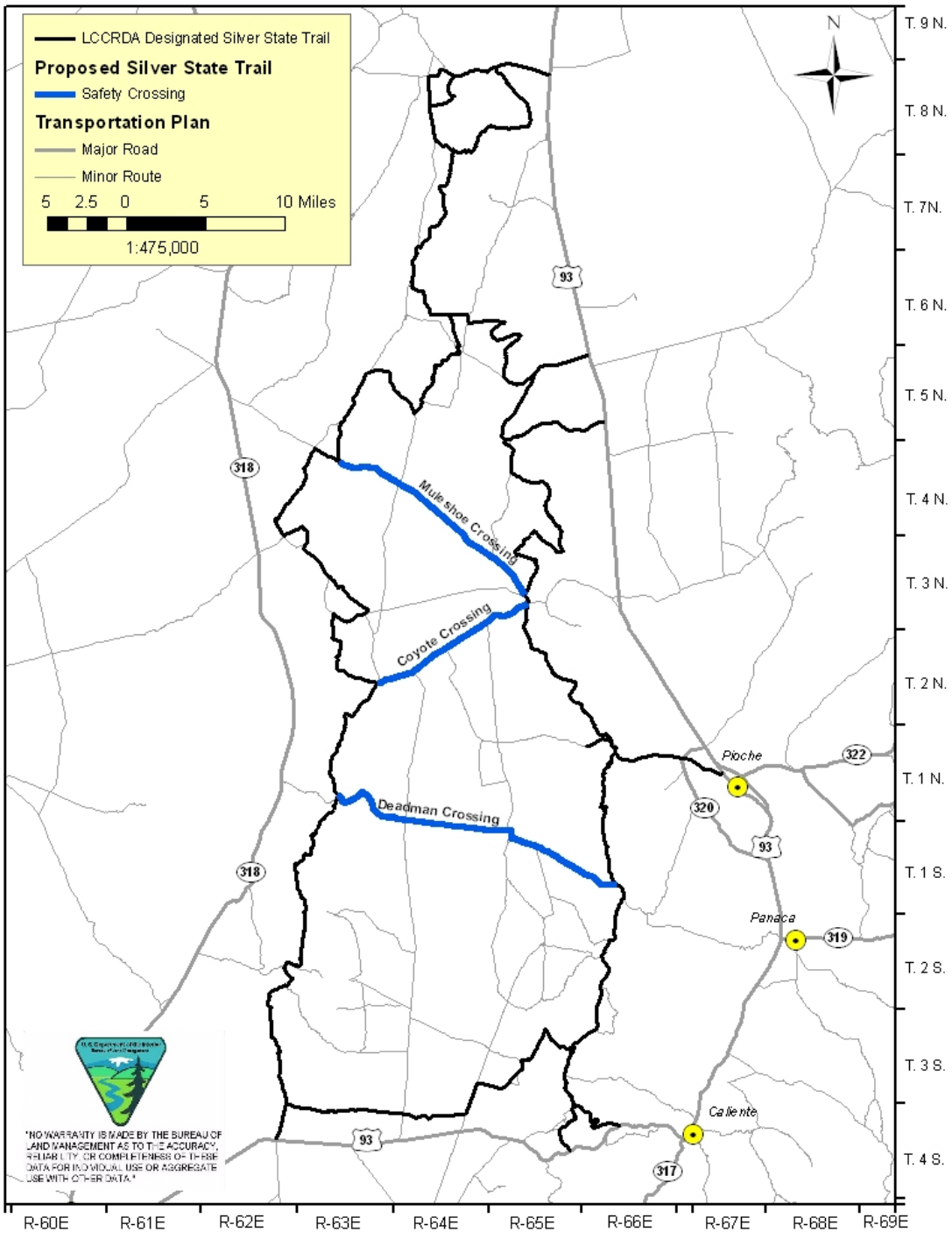
Map 3. Proposed Eliminations



2.1.2 Safety Crossings

Muleshoe Valley Crossing, Coyote Crossing and Deadman Crossing would be added to the Trail in order to provide designated safe and convenient loop opportunities on well-maintained roads for Trail users to return to trailheads for supplies and camping.

Map 4. Proposed Safety Crossings



2.1.3 Reroutes on Existing Roads

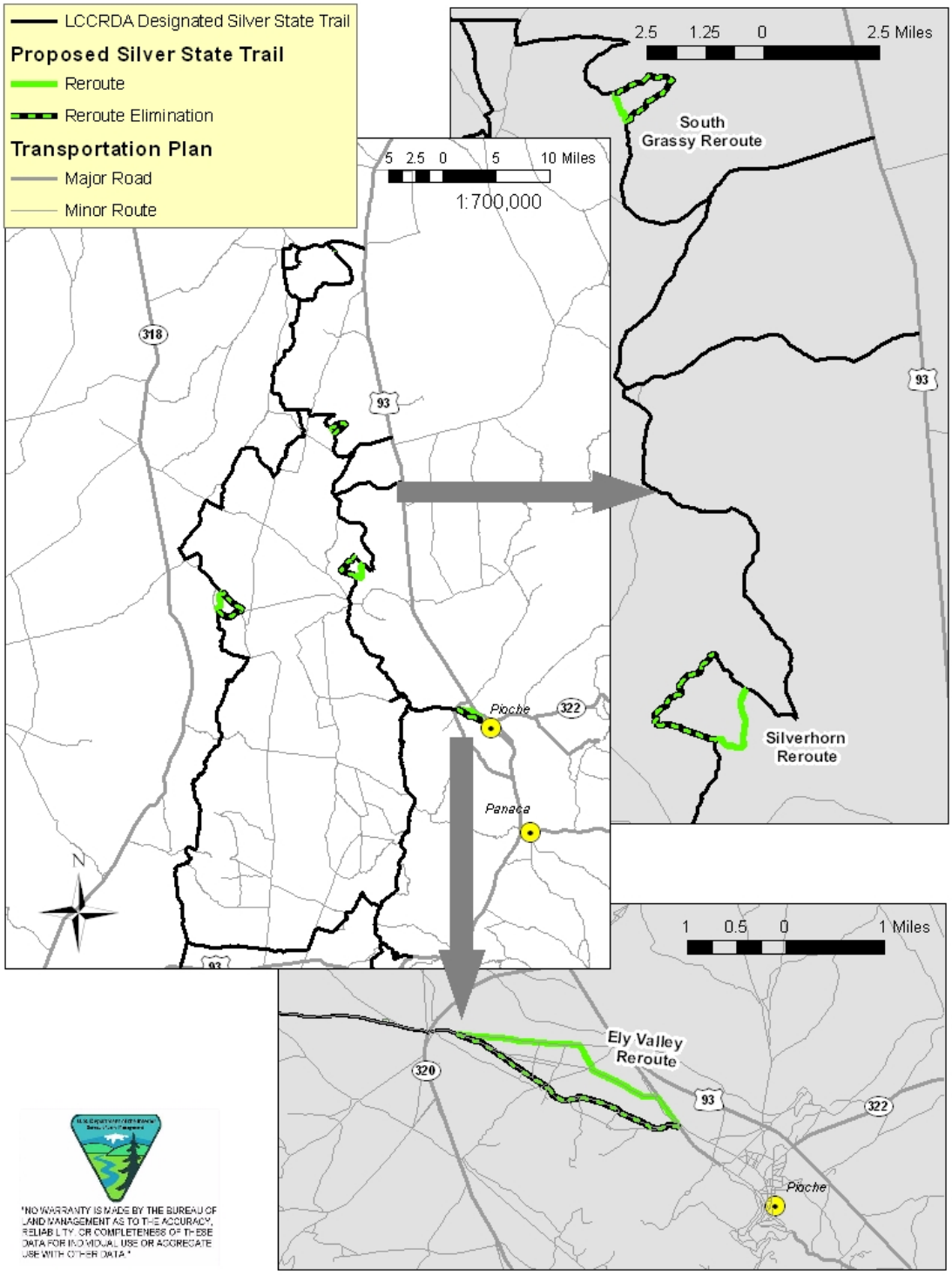
The Burnt Peak Reroute, located south of Burnt Peak on an existing two-track road, would replace a section of the Trail that follows along the Bristol Well Road. The purpose of this reroute would be to increase Trail user safety by avoiding several miles of high-speed, high-traffic road.

The South Grassy Reroute, located on the western slope of Grassy Mountain on an existing two-track road, would replace a section of the Trail that makes a right turn off of one road, follows another road up the mountain for approximately 1.5 miles, then turns back down the hill and reconnects with the original road. The reroute would allow Trail users to remain on the original road, thereby avoiding critical winter habitat for mule deer and providing an enjoyable user experience along the reroute's interesting terrain.

The Silverhorn Reroute, located north of Bristol Well on an existing two-track road, would replace a section of the Trail that runs through Silverhorn Mine property and adjacent to a deep, open mine pit. The purposes of this reroute would be to increase user safety by directing users away from the dangerous open pit and to avoid potential conflicts with private property owners.

The Ely Valley Reroute, located two miles north of Pioche on a county-maintained, bladed road, would replace a section of the Trail that runs along a bladed road through patented mine property. The reroute would avoid this property and reduce the potential for conflicts with property owners.

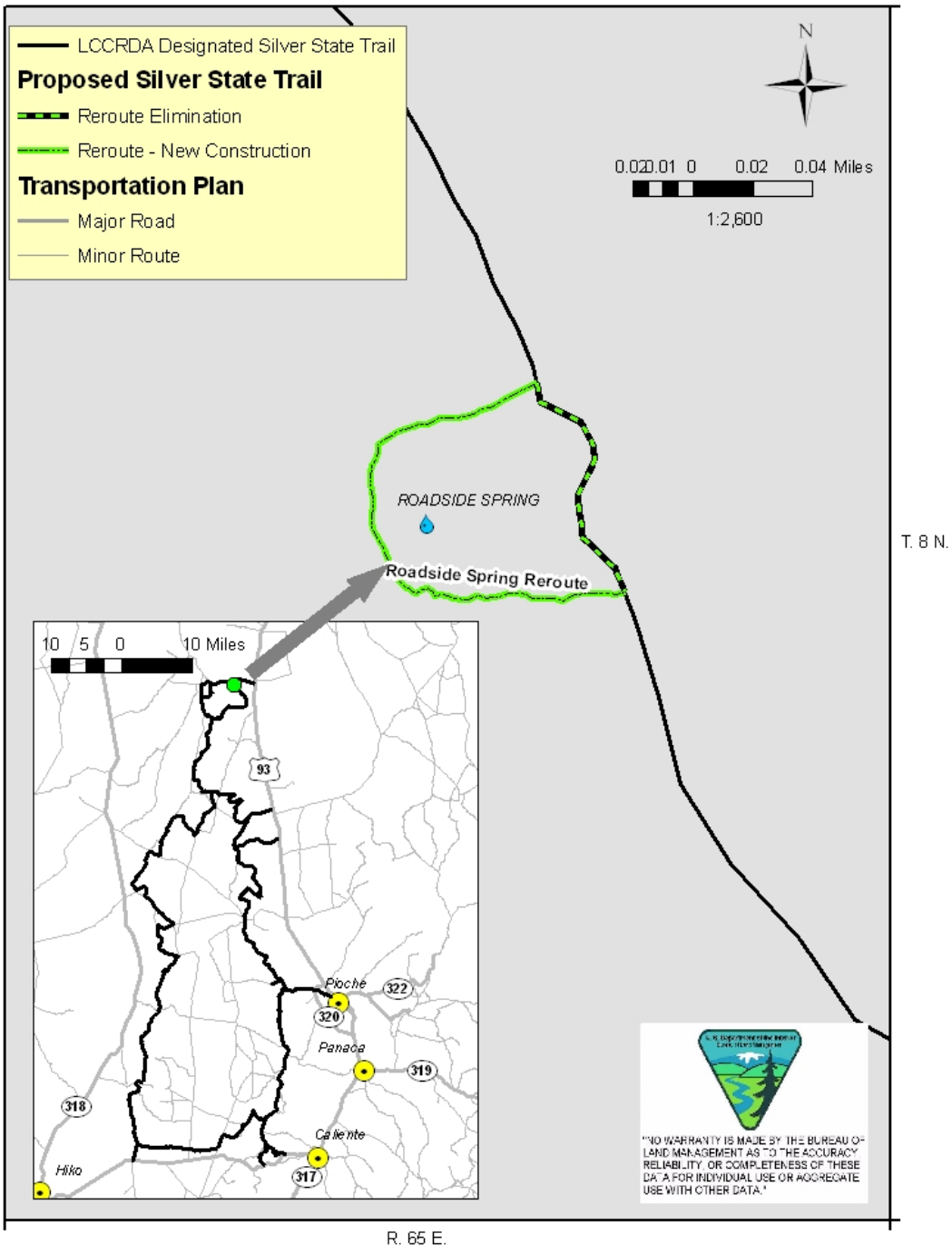
Map 5. Proposed Reroutes on Existing Roads



2.1.4 Reroutes Requiring New Construction

The Roadside Spring Reroute, located one mile south of Patterson Pass, would replace a section of an existing two-track road designated as part of the Trail. This existing road crosses through the riparian area associated with Roadside Spring. The new route would be constructed uphill from the spring and riparian area, avoiding areas of riparian vegetation. Approximately 800 feet of new road would be constructed, and the existing road through the riparian area would be rehabilitated. Resource specialists in hydrology, soil science and cultural resources would be involved in determining the exact route of new road construction. A cultural resource specialist would be present at the time of construction.

Map 6. The Proposed Roadside Spring Reroute



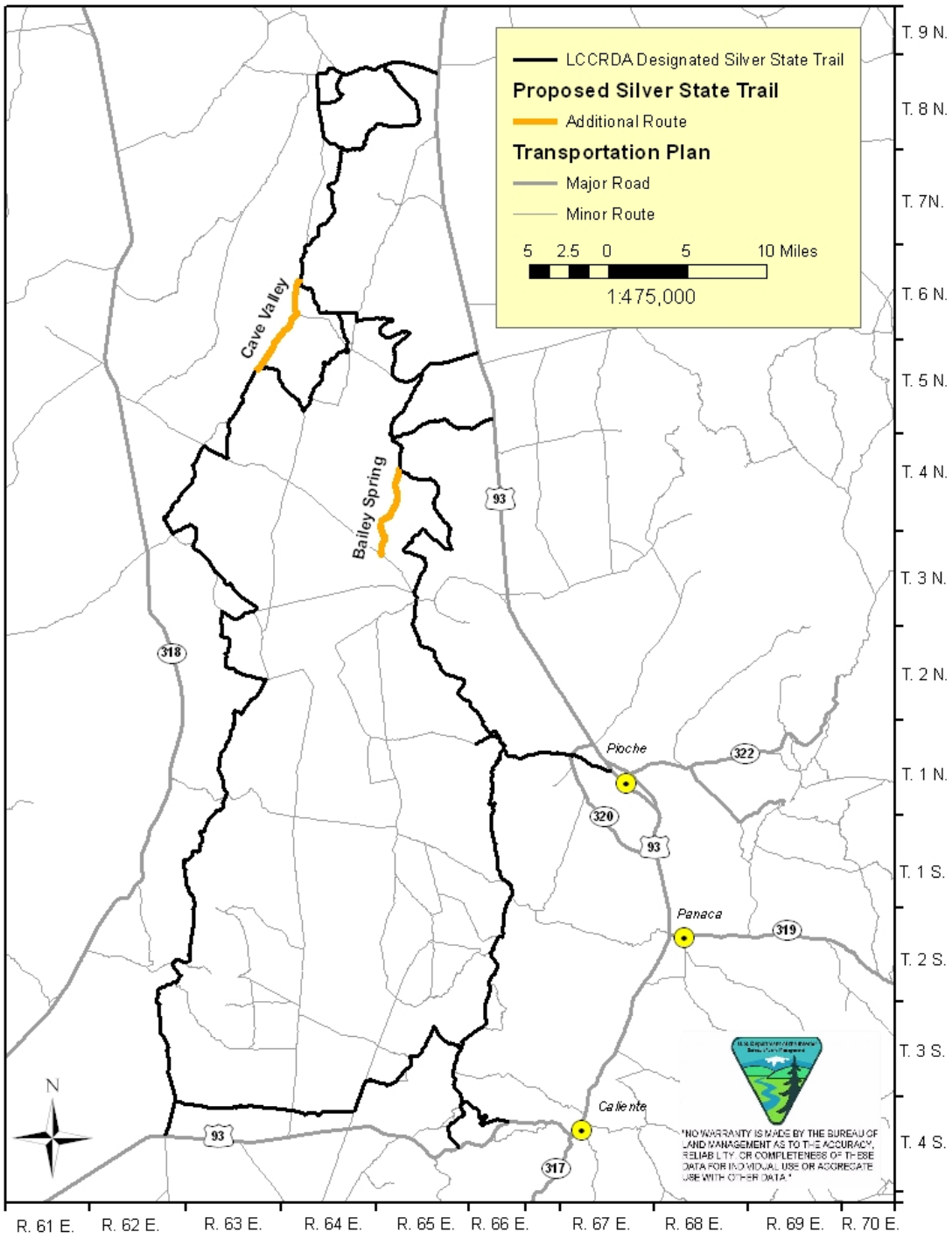
2.1.5 Additional Route Designation

The purpose of designating additional routes would be to provide opportunities for larger OHVs to avoid narrow, All-Terrain Vehicle (ATV)-compatible sections of Trail. Encouraging larger OHVs to use the additional routes would prevent widening of the narrow Trail sections, protecting trail-side vegetation.

The Cave Valley Additional Route would be added to the Trail in order to allow larger OHVs to avoid narrow sections of Trail from Sidehill Pass to Big Mud Pass. This additional route would be designated on an existing two-track road.

The Bailey Spring Additional Route would be added to the Trail in order to allow larger OHVs to avoid narrow sections of Trail through the Fairview Range. This additional route would be designated on an existing bladed road.

Map 7. Proposed Additional Routes



2.1.6 Trailhead Development

Trailheads would be constructed along the Trail in order to provide users with designated, hardened sites for parking, unloading ATVs and camping. Designating and hardening sites would protect natural and cultural resources by encouraging Trail users to remain within trailheads and practice areas for camping and unloading, rather than parking at pull-offs along the Trail or nearby roads. Trailheads would also provide safe, convenient and enjoyable places to gather, practice and camp.

Trailheads would disturb approximately five to ten acres of land each. Trailhead sites would be hardened with gravel, and split-rail fences would be installed where necessary for control of vehicles. Amenities at each trailhead could include a pit toilet, fire rings, picnic tables, shade structures and an informational kiosk to provide Trail users with information about the Trail, use regulations and interpretation of natural, archaeological and historic resources. Materials for these structures would blend into the landscape to the greatest degree possible. Additionally, an ATV practice area would be provided at each trailhead. Camping would be permitted at these trailheads and subject to the 14-day stay limit enforced on BLM lands.

Chief Mountain South Trailhead, provided to demonstrate what the proposed trailheads may resemble when complete

The Patterson Trailhead would be located on the east side of Patterson Pass, approximately one mile from Highway 93, on the south side of the Patterson Pass Road. During construction of the Patterson Trailhead, once the area has been cleared, the slash piles of downed vegetation would be burned according to state regulations on the cleared surface that would be hardened for the trailhead.

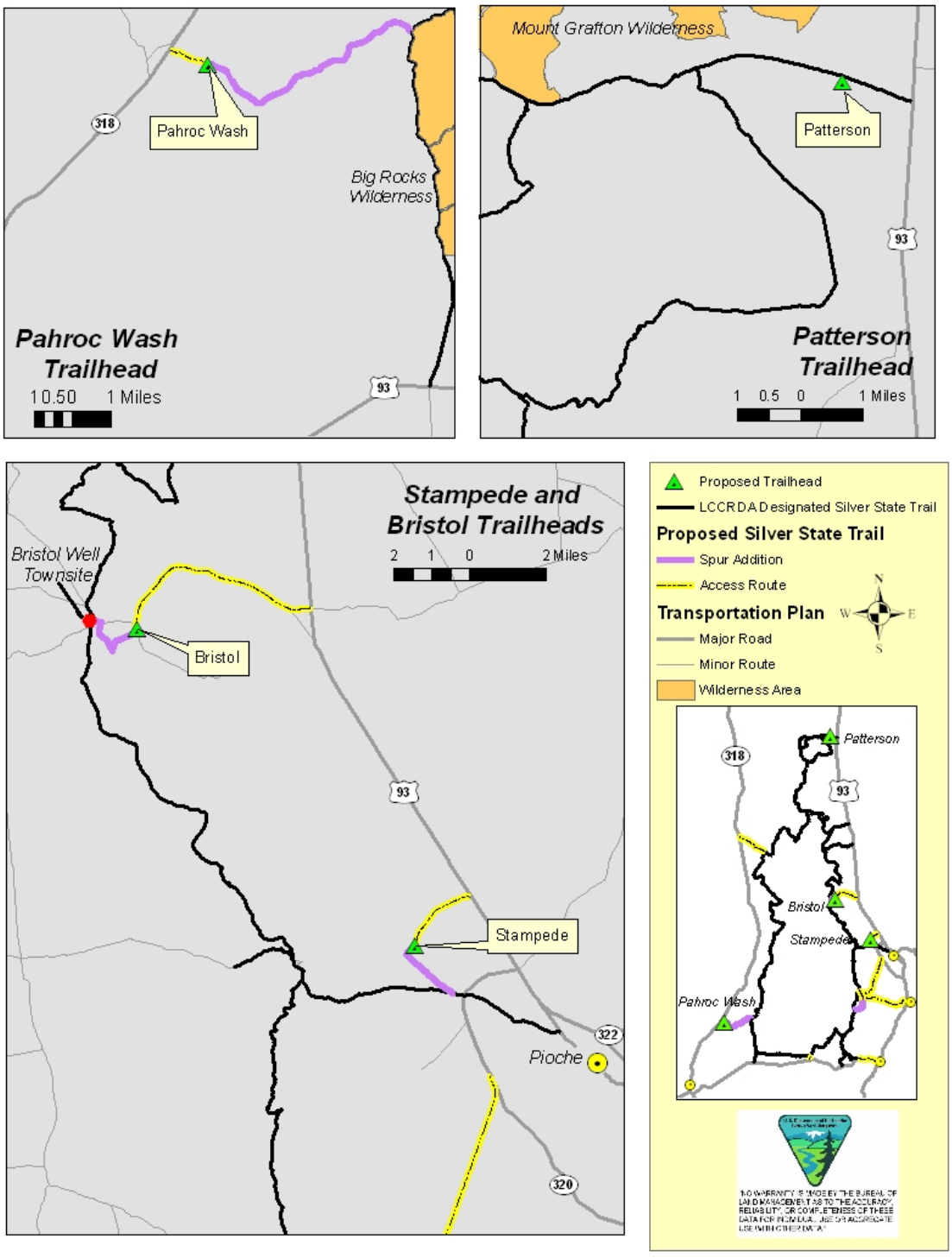
The Stampede Trailhead would be located adjacent to the Pioche community gravel pits approximately six miles northwest of Pioche. By permit, this trailhead would be a camping and staging area for large group gatherings and events. This would be a public-use trailhead at all other times. A Memorandum of Understanding (MOU) would be developed between the BLM, the Town of Pioche and the Nevada Department of Transportation (NDOT) to guide the management of the Stampede Trailhead and

community gravel pits. The Town of Pioche and NDOT would agree to grade extraction areas to safe slopes at the completion of their extraction projects so that Trail users exploring the area would not be exposed to unsafe, steep stockpile faces.

The Bristol Well Trailhead would be located southeast of the Bristol Well junction, 1.25 miles from the junction and historic site, and away from historic resources in the area.

The Pahroc Wash Trailhead would be located 17 miles north of the junction of Highway 93 and State Route 318, approximately one mile up the wash from State Route 318.

Map 8. Proposed Trailheads



2.1.7 Spur Additions

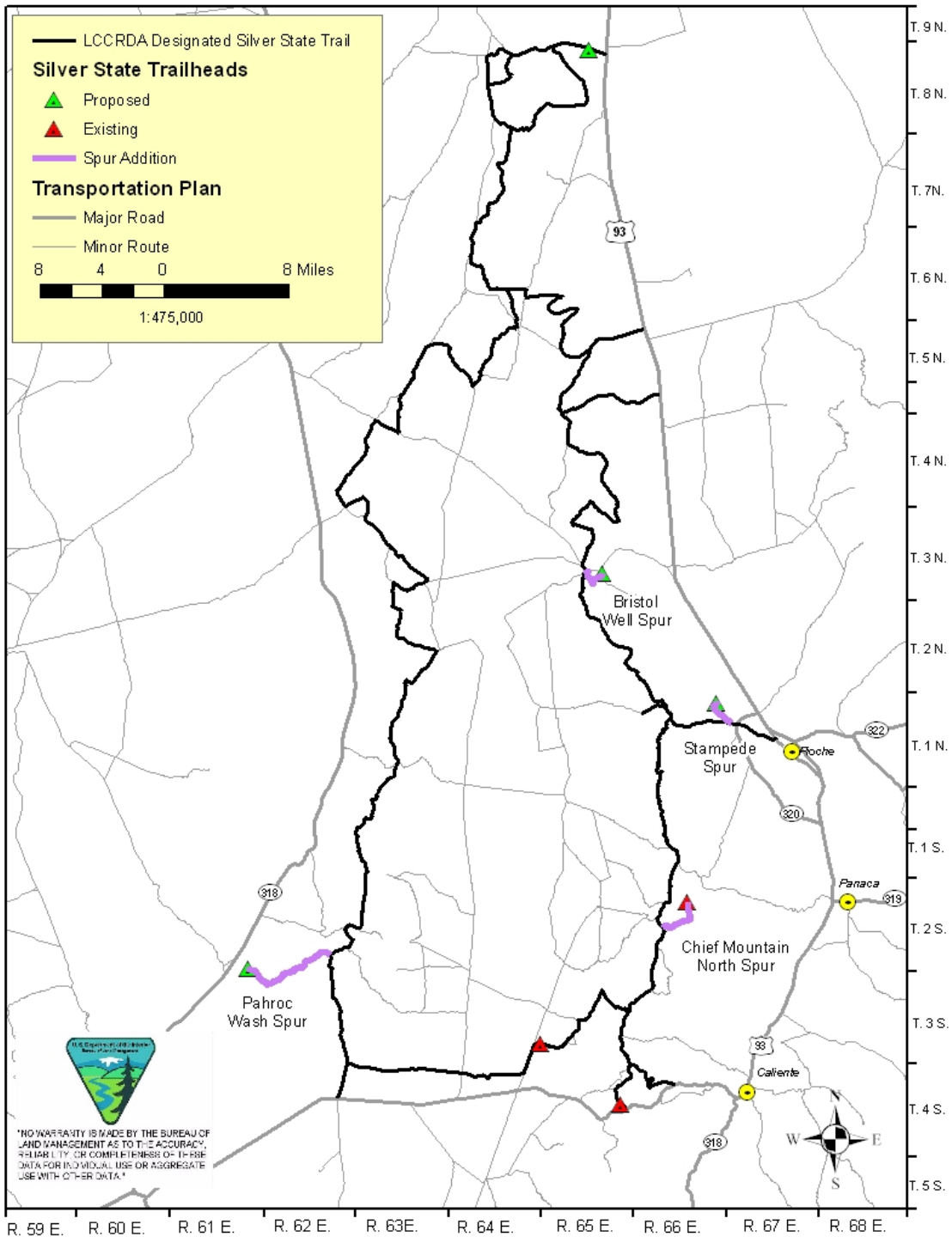
The Bristol Well Spur would be added to the Trail to provide OHV access from the Bristol Well Trailhead to other parts of the Trail. This spur would be designated on existing two-track and bladed roads.

The Stampede Spur would be added to the Trail to provide OHV access from the Stampede Trailhead to other parts of the Trail. This spur would be designated on an existing two-track road.

The Pahroc Wash Spur would be added to the Trail to provide OHV access from the Pahroc Wash Trailhead to other parts of the Trail. This spur would be designated on an existing bladed road.

The Chief Mountain North Spur would be added to the Trail on existing roads to provide OHV access from the existing Chief Mountain North Trailhead to other parts of the Trail. This spur would be designated on existing two-track and bladed roads.

Map 9. Proposed Spur Additions



2.1.8 Access Routes

Access routes would not be recognized as part of the Trail, but they would receive concentrated, increased use as a result of the Proposed Action. Therefore they must also be analyzed for potential impacts to natural and cultural resources.

The Bristol Well Access Route would provide full-size vehicle access from Highway 93 to the Bristol Well Trailhead.

The Stampede Access Route would provide full-size vehicle access from Highway 93 to the Stampede Trailhead.

The Pahroc Wash Access Route would provide full-size vehicle access from Highway 93 to the Pahroc Wash Trailhead.

The Panaca Access Route would provide full-size vehicle access from Highway 93 at Panaca to the Chief Mountain North Trailhead.

The Pioche South Access Route would provide full-size vehicle access from Pioche to the Chief Mountain North Trailhead.

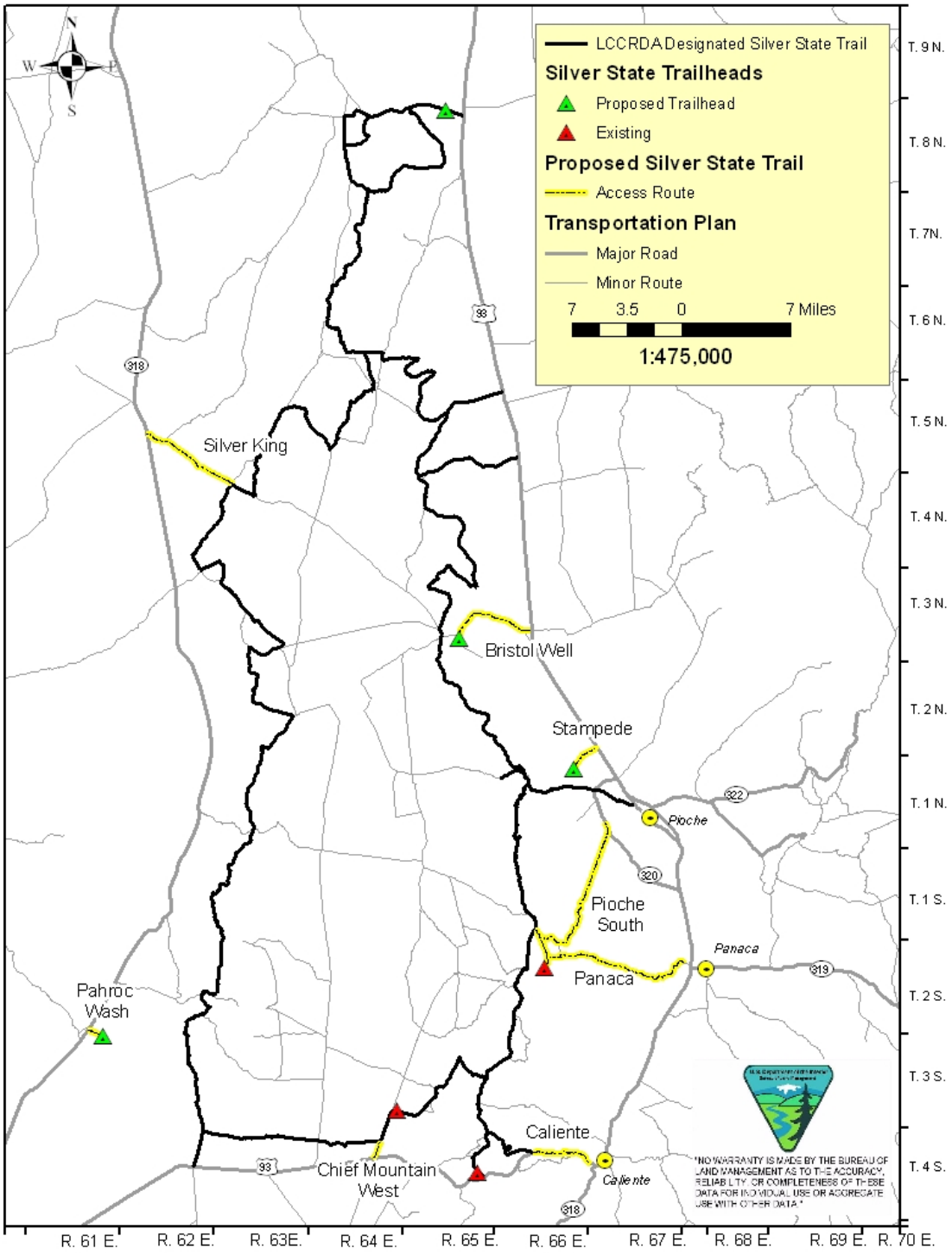
The Silver King Access Route would provide full-size vehicle access from Gap Mountain on State Route 318 along the road that crosses the Silver King Pass to the Trail.

The Chief Mountain West Access Route would provide full-size vehicle access from Highway 93, just west of the Burnt Springs Range, to the Chief Mountain West Trailhead.

These Access Routes would all be designated on county-maintained, bladed roads. The BLM would monitor these roads and work with the Lincoln County Roads Department to repair any damage to the roads that would be caused by increased traffic due to use of the Trail.

The Caliente Access Route would provide ATV access on an existing two-track road and a roadless dry wash through Newman Canyon from Caliente to the eastern fork of the Trail in the southern Chief Mountain area. This route has previously been used as an OHV race course.

Map 10. Proposed Access Routes



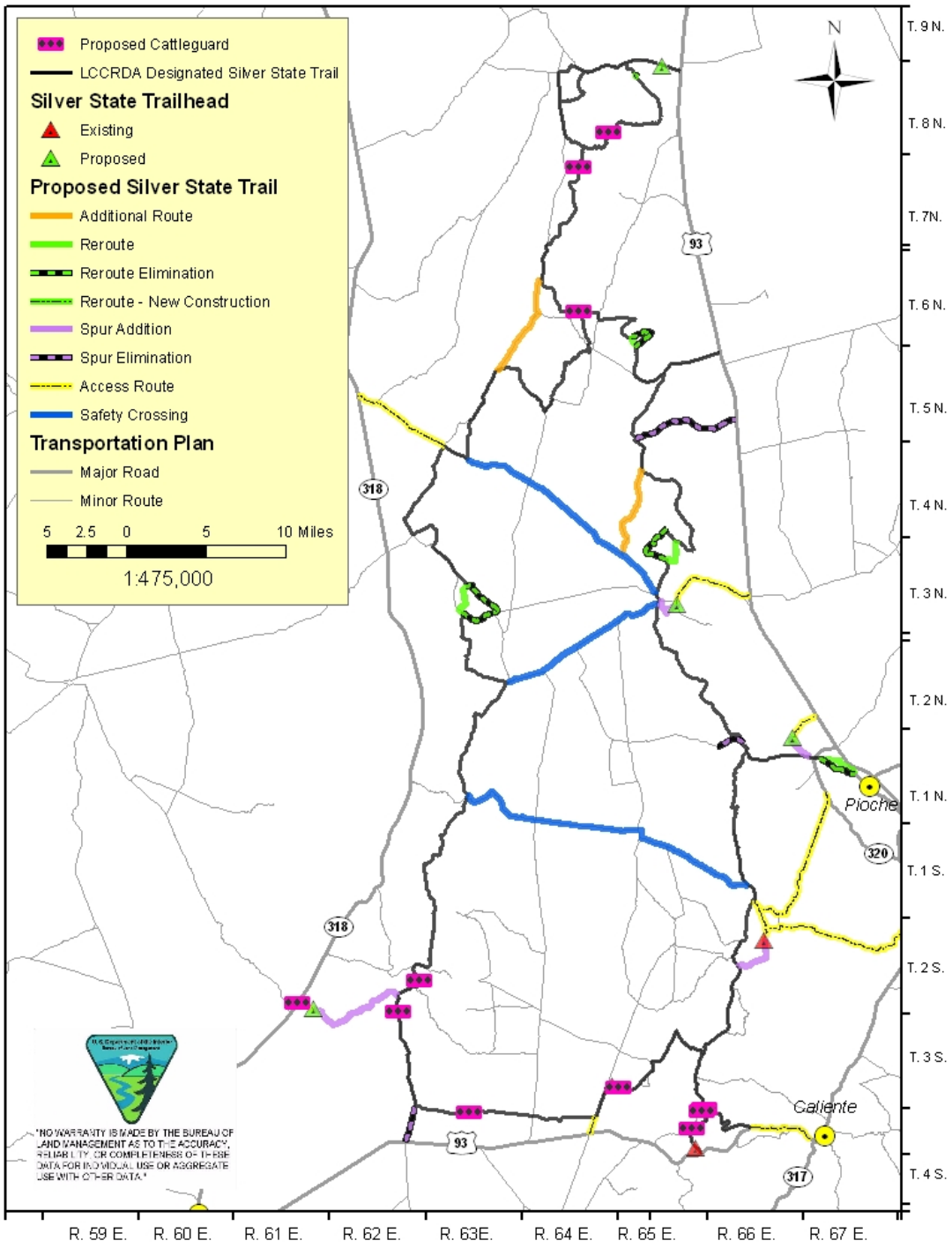
2.1.9 Improvements for Range and Water

Cattleguards would be installed in eleven locations where the Trail crosses a fence line without an existing cattleguard in order to keep conflicts between Trail users and permittees to a minimum. Installation would be accomplished in phases according to priorities set by Trail use and potential for conflict in each installation location and based on the availability of funding for purchase, installation and maintenance of the cattleguards.

Table 1. Proposed Cattleguards

Allotment	Cattleguard location name
Oak Springs	NSA Fence Gate, South Gate
	NSA Fence Gate, Middle Gate
	NSA Fence Gate, North Gate
	Oak Springs/Pahroc Allotment Fence Gate
Cliff Springs	Chief Mountain West Trailhead Gate
Pahroc	Pahroc/Mustang Allotment Division Gate
White River	Pahroc Wash Trailhead Access
Mustang	Mustang/Rattlesnake Allotment Boundary
Wilson Creek	Muleshoe Drift Fence Gate
Cave Valley Ranch & Shingle Pass	Harris Free Fence Gate
	Milk Ranch Summit Gate

Map 11. Proposed Cattleguards



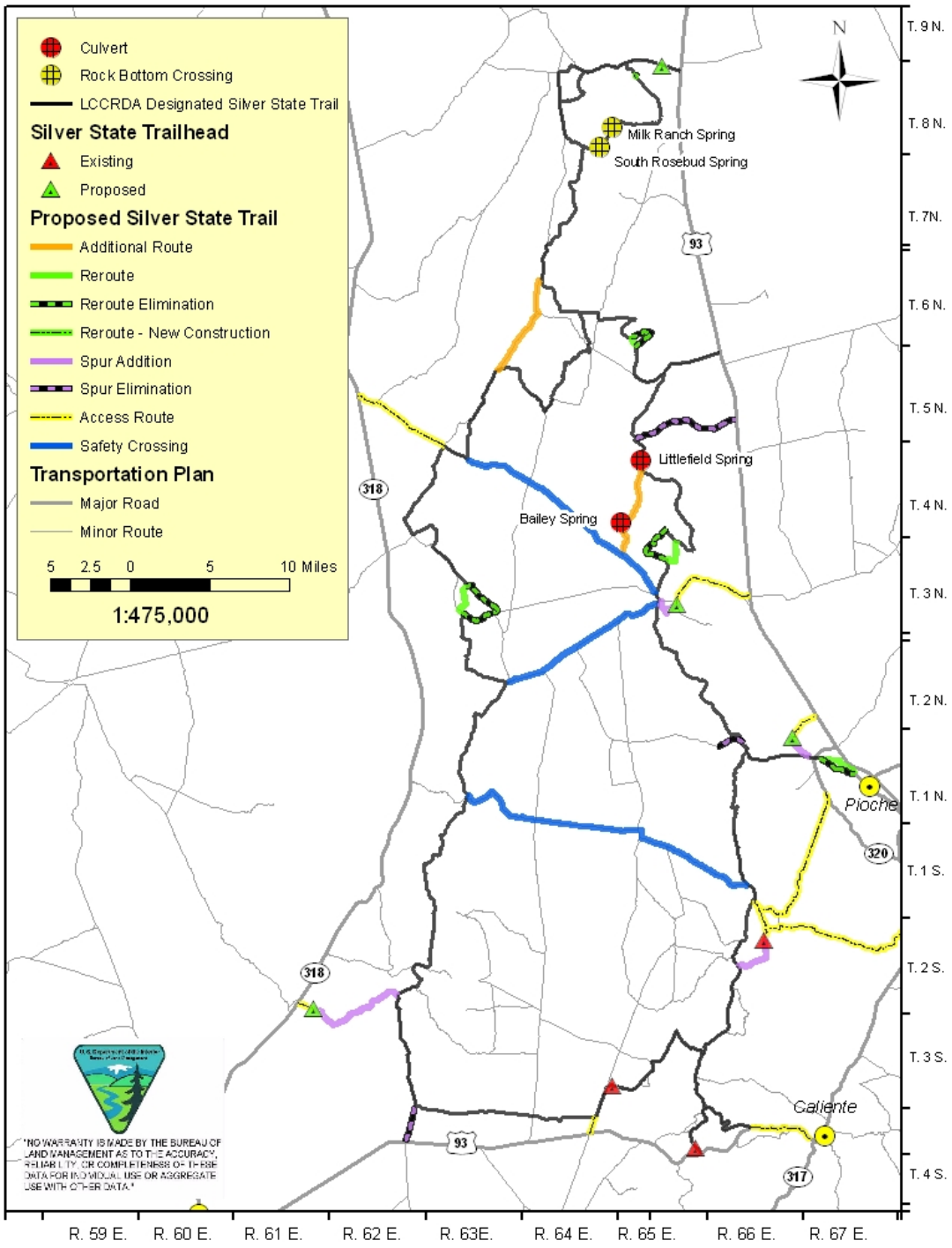
Southeast of Roadside Spring, three fenced sections of the Geyser Ranch grazing allotment intersect at a gate and a cattleguard; the end of the cattleguard serves as one side of the gate. The cattleguard has been fenced over and is currently unused, and the Trail crosses through the fence intersection at the gate. Working with the relevant permittees, the cattleguard would be cleaned out, the gate would be permanently closed and the fences would be moved slightly so that the existing road and the Trail would cross the fenceline at the cattleguard and the pressure from livestock at the fence corners would be moved off of the road. The purpose of this action would be to reduce potential conflicts between grazing permittees and Trail users.

Water from the overflow of the existing trough at North Mud Spring would be piped approximately 100 yards away from the trough and the road, and a second trough would be installed at that location. The purpose of this water development enhancement would be to allow wild horses, wildlife and livestock to water at a location that is not directly adjacent to the Trail.

All open water crossings on the Trail with consistent year-round flow would be improved for the purpose of protecting riparian areas downstream of the crossings and to minimize erosion. Water crossings on county-maintained, bladed roads at Littlefield and Bailey Springs would receive culverts, and crossings on two-track roads at South Rosebud and Milk Ranch Springs would receive rock-bottom crossings (also known as Arizona crossings). Where the traditional flow of water has been altered by use along roads designated as parts of the Trail, where possible, aberrant channels would be restored to their original course.

The BLM Ely District is in the process of accomplishing a district-wide watershed analysis. Information from the completed analysis would help to develop adaptive management actions for water improvements along the Trail in the future.

Map 12. Water Crossings



2.1.10 Archaeological Resources and Historic Properties

The BLM would ensure that a records and literature search (Class I) be conducted for the Proposed Action. An intensive archaeological survey (Class III) would be conducted for any ground-disturbing activities, such as trailhead construction, reroutes on roads not previously inventoried and areas of new road or trail construction. These inventories would be conducted by a cultural resource specialist.

2.1.11 Temporary Trail Closures

Sections of the Trail could be temporarily closed under the following circumstances:

- When necessary to protect the safety of Trail users and wild horses during wild horse gathers;
- During wildland fire events;
- For Emergency Stabilization and Rehabilitation efforts following wildland fire events;
- During any major construction projects that might threaten the safety of Trail users;
- For flood events;
- Any other times that the BLM deems temporary Trail closure necessary to protect natural, archaeological or historic resources;
- Any other times that the BLM deems temporary Trail closure necessary for user safety.

Reasonable prior notification of temporary closures would be provided to Trail users by posting announcements on the BLM website, the Trail hotline, information kiosks on the Trail and signs in the area of the temporary closure.

2.1.12 Sign Plan

Trail markers would be placed along the proposed routes in order to indicate the roads designated as part of the Trail for Trail users. Other safety and travel management signs would be placed throughout the entire Trail, both existing and proposed, and agreements would be made with the Pan American Mine and NDOT regarding where Trail signs would need to be placed on mine property and NDOT rights of way. Up to 20 informational and interpretive kiosks would be placed at numerous locations around the entire Trail, both existing and proposed. Where interpretive kiosks are located, pullouts of 5 to 10 feet wide by 10 to 20 feet long would be constructed. Locations for kiosks and pullouts would be chosen that avoid sensitive natural and cultural resources and wildlife habitat.

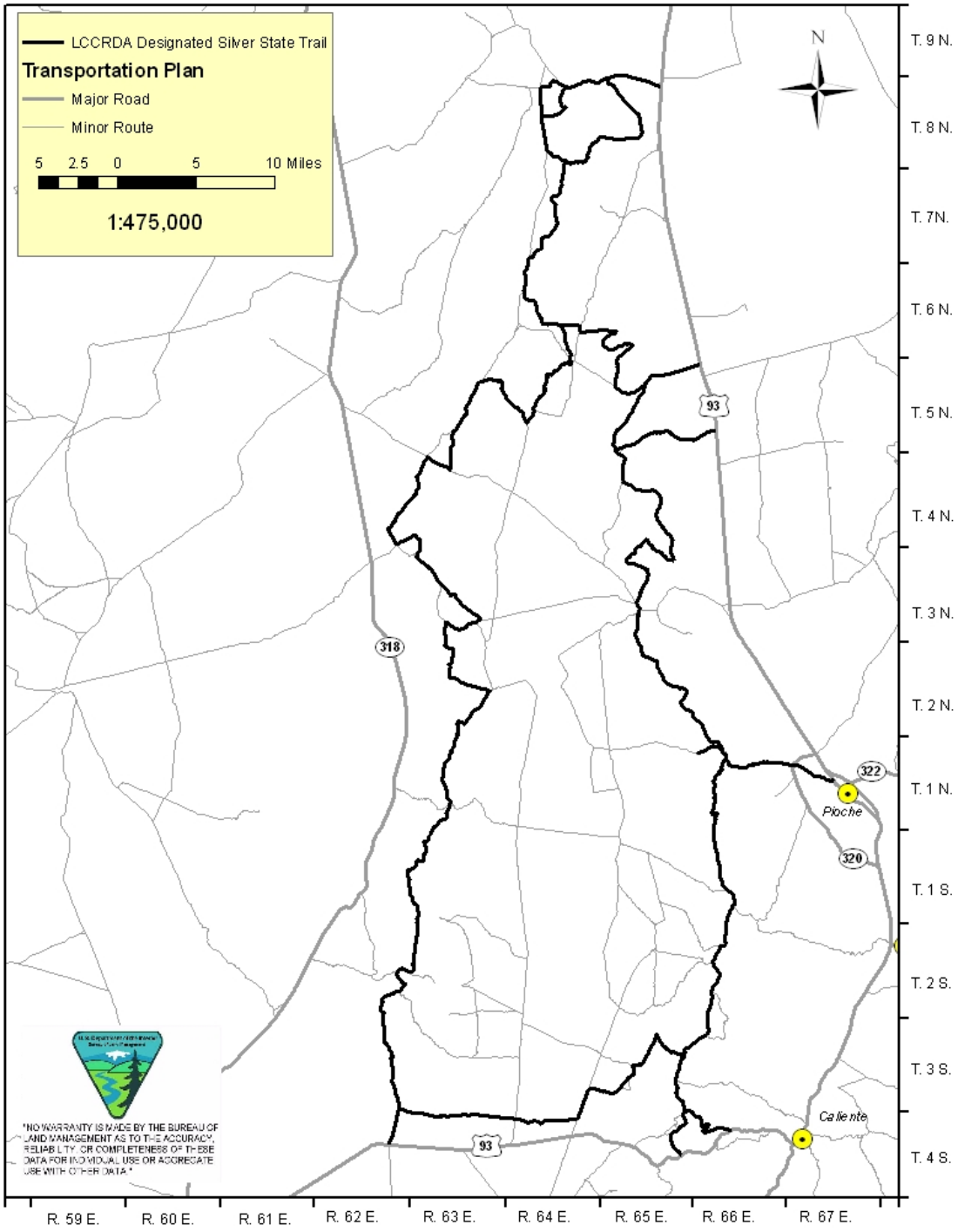
2.1.13 Monitoring

Proposed actions would be monitored as part of the overall Trail Monitoring Plan (see Appendix A).

2.2 No Action Alternative

The No Action alternative represents management of the Trail as it was designated by LCCRDA. All actions for meeting the minimum requirements of LCCRDA would be addressed in the Silver State Trail Management and Monitoring Plans. No changes would be made to the Trail as it was designated by Congress in order to provide for the protection of natural and cultural resources or for user safety. These resources and the safety of Trail users would be protected by temporary closures of sections of Trail that could then be analyzed for possible permanent reroutes. LCCRDA further provides for temporary Trail closures in order to repair damage to the Trail or resources.

Map 13. The Silver State Trail as Designated by LCCRDA



2.2.1 Eliminations of Designated Sections of Trail

No sections of trail would be eliminated from the Trail.

2.2.2 Safety Crossings

No safety crossings would be added to the Trail to provide safe and convenient loop opportunities on well-maintained roads for Trail users to return to trailheads for supplies and camping.

2.2.3 Reroutes on Existing Roads

Initially, no sections of trail would be rerouted from the Trail. Reroutes of sections of trail would be permitted on existing roads, pending further analysis, if monitoring demonstrates negative impacts to natural or cultural resources and the section of existing Trail in question has been temporarily closed due to these impacts.

2.2.4 Reroutes Requiring New Construction

No sections of the Trail would be replaced by newly constructed sections of road or trail to mitigate for impacts to natural resources.

2.2.5 Additional Route Designation

No additional routes would be added to the Trail to provide opportunities for larger OHVs to avoid narrow, ATV-compatible sections of Trail.

2.2.6 Trailhead Development

No new trailheads would be developed along the Trail.

2.2.7 Spur Additions

No spur additions would be necessary to provide OHV access from trailheads to other parts of the Trail, so none would be designated.

2.2.8 Access Routes

Sections of the existing Trail that intersect with Highway 93 and State Route 318 would be considered access points and would be adequately signed for existing use. No new access routes would be designated.

2.2.9 Improvements for Range and Water

Initially, no improvements would be developed for range or water as those resources relate to the Trail. If impacts to these resources develop beyond the current situation as a

result of Trail use, then impacted sections of the Trail would be temporarily closed to repair the damage or to permanently reroute the Trail, pending further analysis.

2.2.10 Archaeological Resources and Historic Properties

A records and literature search (Class I) would be conducted for any sections of the Trail that have not been previously inventoried.

2.2.11 Temporary Trail Closures

Sections of the Trail would be temporarily closed under the following circumstances:

- The Trail is having an adverse impact on natural or cultural resources;
- Circumstances on the Trail threaten public safety;
- Closure of the Trail is necessary to repair damage to the Trail or to resources.

2.2.12 Sign Plan

Existing trail markers would be maintained and new trail markers would be installed where necessary to indicate the roads designated as Trail for Trail users. No other permanent signs would be placed along the Trail.

2.2.13 Monitoring

Monitoring would occur on the existing Trail as required by LCCRDA (see Appendix A).

2.3 Alternatives Considered but Eliminated from Detailed Analysis

2.3.1 Safety Crossings

Dry Lake Crossing was eliminated from analysis due to excessive amounts of silty soils along this route, as well as the presence of the Desert Valley kangaroo mouse, a Nevada BLM sensitive species. Additionally, the route would not serve to increase convenience or enjoyment of recreational opportunities.

South Cave Valley Loop Crossing was eliminated from analysis because it would disturb sensitive habitat for sage grouse and mule deer as well as an elk migration corridor. This crossing may also threaten the wilderness resource of the Far South Egans Wilderness and it would not serve to increase convenience or user enjoyment.

Lower Muleshoe Loop Crossing was eliminated from analysis because it would be an unnecessary extra section of Trail, it would cross through silty soils and sensitive mule deer habitat, and it would not increase convenience or enjoyment of recreational opportunities.

2.3.2 Loop Opportunities

The Ida May and Highland Loop Opportunities were eliminated from analysis because they would be unnecessary and redundant sections of Trail that would not increase convenience or enjoyment of recreational opportunities. Additionally, they would cross through land where active and closed mines abound, therefore threatening the safety of Trail users.

The Ida May Loop Opportunity would be contingent on the designation of the Jackrabbit Trailhead, which has also been eliminated from analysis (see Section 2.3.4).

2.3.3 Reroutes on Existing Roads

The Coyote Spring Reroute was eliminated from analysis; it would be a reroute to a proposed Safety Crossing. It was originally suggested as a way to avoid a section of Coyote Crossing that traversed an area of silty soils. It was eliminated from analysis because Coyote Crossing is proposed on a bladed, county-maintained road, which is a hardened surface. Trail users driving on the hardened surface of an existing road would not create new impacts to silty soils in the area. Additionally, it is likely that Trail users would quickly realize that the reroute would follow a two-track for a short distance, then connect back up to the bladed road; they would probably choose to remain on the bladed road in order to make a more efficient crossing of Dry Lake Valley.

2.3.4 Trailhead Development

Two locations in addition to what was proposed for the Patterson Trailhead were considered. One location was on the western side of Patterson Pass; it was eliminated from analysis because the Nevada Department of Wildlife (NDOW) was concerned about the proximity of a trailhead to sage-grouse leks in Cave Valley. The second location considered was on the eastern side of Patterson Pass, on the northern side of the road, very close to the proposed Patterson Trailhead. This location was eliminated from analysis in an effort to discourage OHV use to the north of the Patterson Pass Road where the Mount Grafton Wilderness could be impacted.

The Gap Mountain Trailhead was eliminated from analysis; it would be located approximately one mile east of State Route 318 on the Silver King Road, across the highway from Gap Mountain. The Scout Camp Trailhead would be located on the southern end of the Egan Mountain Range, approximately six miles east of State Route 318. These two trailheads were suggested because of the possibility that Trail users might want a trailhead in the area of the Wayne E. Kirsh Wildlife Management Area and Adams-McGill Reservoir. They were eliminated from detailed analysis, however, because of their distance from towns and services, the maintenance costs that would be associated with access routes to the trailheads and the distance from the trailheads to other parts of the Trail. Additionally, these trailheads would be located in sensitive habitat for elk and mule deer.

The Juniper Trailhead was eliminated from analysis; it would be located along the existing Trail, 0.25 miles south of Griswold Well, northwest of Silver King Pass. It was eliminated from analysis because of its close proximity to the historic Griswold Well site and its distance from towns and services.

The 318 Gravel Pit Trailhead was eliminated from analysis; it would be located just off of State Route 318, west of Coyote Spring. It was eliminated from analysis because of the distance of the location from towns and services. Additionally, it is an unappealing location for recreation.

The North Pahroc Trailhead was eliminated from analysis; it would be located approximately 0.5 miles off of State Route 318, in a reclaimed Nevada Department of Transportation (NDOT) gravel pit, adjacent to a bladed road that leads to Deadman Spring and the western end of Deadman Crossing. It was eliminated from analysis because of the distance of the location from towns and services. Additionally, it would be unlikely to draw use away from the Pahroc Summit and Big Rocks Wilderness area because it is an unappealing location for recreation. Further, this trailhead would be visible from State Route 318, and would likely receive more use as a roadside rest than as a trailhead for the Trail.

Southwest Trailheads 1, 2 and 3 were eliminated from analysis; they would be located along the same road as the proposed Pahroc Wash Trailhead. Southwest Trailhead 1 was eliminated from analysis because it is located in an active NDOT gravel pit. Southwest Trailheads 2 and 3 were eliminated from analysis because they are located further up the wash from the proposed Pahroc Wash Trailhead, and it would be costly to maintain the associated access route.

The Big Rocks Trailhead was eliminated from analysis; it would be located at the southwest corner of the Big Rocks Wilderness, approximately 2.5 miles north of Highway 93 at Pahroc Summit Pass. It was eliminated from analysis because encouraging recreational OHV users to camp next to a wilderness boundary may threaten the wilderness resource by increasing the likelihood of motorized trespass into the Big Rocks Wilderness. Additionally, there would be a high potential for conflicts to arise between Trail users and people seeking primitive recreational experiences in the wilderness, rock climbers who use the Mecca area of the Big Rocks Wilderness for bouldering, permittees with grazing rights who use the corral in the area and private property owners who own a 40-acre parcel that includes Pahroc Spring.

The Muleshoe Valley Trailhead was eliminated from analysis; it would be located along the existing trail, on the west side of Kixmiller Summit, northwest of South Mud Spring. It was eliminated from analysis because of the difficulty of getting full-size vehicles with trailers into the area and the associated costs of maintenance. Additionally, with the proposed Patterson and Bristol Well Trailheads, the Muleshoe Valley Trailhead would be redundant and unnecessary.

The Jackrabbit Trailhead was eliminated from analysis; it would be located less than one mile west of Highway 93, just north of the Jackrabbit Mines. It was eliminated from analysis because of its close proximity to historic resources as well as active and closed mines that could threaten the safety of Trail users. Additionally, with the proposed Bristol Well Trailhead, the Jackrabbit Trailhead would be redundant and unnecessary.

The Bristol Pass Trailhead was eliminated from analysis; it would be located approximately 2.5 miles west of Highway 93, near Bristol Summit. It was eliminated from analysis because of its distance from the trailhead to other parts of the Trail, and the related maintenance and user safety issues of encouraging ATV riders to follow the bladed, high-speed, high-traffic Bristol Road for several miles.

The Highland Trailhead was eliminated from analysis; it would be located along the existing Trail, approximately 2.5 miles west of the intersection of the Trail with State Route 320. It was eliminated from analysis because of the anticipated high cost of implementation and the expected large amount of vegetation removal required to build the trailhead.

The Arizona Peak Trailhead was eliminated from analysis; it would be located along the existing Trail, approximately 0.5 miles west of the intersection of the Trail with State Route 320. It was eliminated from analysis because of the thick vegetation in this area that would have to be cleared for trailhead construction. The proposed Stampede Trailhead was determined to be a better location.

The Ely Valley Trailhead was eliminated from analysis; it would be located along the proposed Ely Valley Reroute, approximately 0.5 miles east of the intersection of the Trail with State Route 320. It was eliminated from analysis because the area has hydric-site vegetation and tends to be muddy, which would cause a problem for full-size vehicles with trailers trying to drive in to the area to camp. The mud would also require costly hardening materials for a trailhead area.

A Dry Lake Crossing Trailhead was suggested without a specific location along the Dry Lake Safety Crossing that was eliminated from analysis. This trailhead was eliminated from analysis because of the silty soils along Dry Lake Crossing; trailhead area hardening and road maintenance would be costly.

2.3.5 Spur Additions

Where any trailheads have been eliminated from analysis, their associated spurs would also be eliminated, since there would be no need to access major roads or other parts of the Trail from these eliminated trailhead locations. These include the Gap Mountain Spur, the 318 Gravel Pit Spur, the North Pahroc Spur, the Jackrabbit Spur and the Bristol Pass Spur.

2.3.6 Access Routes

Any access routes associated with trailheads eliminated from analysis would also be eliminated from analysis. These include the Gap Mountain Access Route, the Juniper Access Route, the 318 Gravel Pit Access Route, the North Pahroc Access Route and the Dry Lake Access Route.

2.3.7 Improvements for Range and Water

Improvements to Deadman Spring were considered because hoses from the tank to the trough cross the road of the proposed Deadman Crossing, and Trail users crossing the hose might cause damage the watering system. It was eliminated from analysis once it was discovered that the hoses are no longer in use, and that pipes had been installed underground that would not be affected by Trail traffic.

Improvements to Big Mud Spring were considered because it is a sole water source, and a large tank for the spring sits just along the road on which the Trail is designated. It was thought that Trail use would disturb wildlife that depended on the spring. Improvements here were eliminated from analysis once it was determined that the large tank is no longer in use; the spring and active improvements to it are up the hill from the Trail and hidden in the trees. The spring itself is approximately 300 yards from the Trail in the trees. Trail users are not likely to disturb the wildlife or wild horses using the spring.

3. Affected Environment

3.1 General Setting

The Proposed Action is located in northern and central Lincoln County, Nevada on land typical of the Central Basin and Range ecoregion with northerly trending fault-block ranges and intervening drier basins. Valleys, lower slopes and alluvial fans are either shrub- and grass-covered or shrub-covered. Higher elevation slopes support woodland, mountain brush and scattered forests.

Elevations within the project area range from approximately 4,600 feet to 7,600 feet, with soils grading upslope from dry and sandy or rocky to productive with organic matter. The annual precipitation ranges from approximately five inches on some of the valley bottoms to 20 inches on the mountain peaks. Most of this precipitation comes during the winter and spring months in the form of snow, supplemented by localized thunderstorms during the summer months. Temperatures range from greater than 90 degrees Fahrenheit in the summer months to negative 20 degrees in the winter.

The mandatory issues to be considered, as identified in the Ely Field Office BLM *Environmental Guidebook*, are listed in the following table with rationales for analysis. Other resources that may be affected are further described in this environmental assessment. Rationales for elimination from analysis of those mandatory issues are also listed in the following table. These items would not be considered further in this document.

Table 2. Mandatory Issues for Consideration and Rationale for Detailed Analysis of Potential Impacts or Elimination from Analysis

Issue	No Effect	May Affect	Not Present	Rationale for Analysis or Elimination
Air Quality		X		Proposed Action may increase local fugitive dust
Areas of Critical Environmental Concern			X	Resource is not present
Cultural, Palentological and Historic Resource Values		X		Proposed Action may increase the risk of damage to or theft of some cultural resources
Environmental Justice	X			No minority or low-income groups would be affected by disproportionately high and adverse health or environmental effects
Farm Lands (prime or unique)			X	No irrigated Prime Farm Lands are present in the project area
Floodplains			X	Issue is not present

Migratory Birds		X		No construction would occur between May 1 and July 15 without a prior survey for nesting birds; migratory birds may be temporarily displaced by general Trail use
Native American Religious Concerns	X			There are no known issues of concern to local tribes
Non-Native, Invasive Species		X		The distribution of noxious weeds and invasive species may be increased by the Proposed Action
Threatened and Endangered Species			X	Bald eagles are winter visitors to the region, and the habitat they use is not in the project area. Critical desert tortoise habitat is located approximately 30 miles south of the southernmost section of the project area.
Special Status Species		X		Sensitive animals and plants occupy small sections of the project area
Visual Resource Management		X		Proposed Action may cause short-term impacts to visual resources
Wastes (hazardous or solid)		X		Human waste may impact resources
Water Quality (drinking)	X			Drinking water sources would not be encountered
Water Quality (ground)	X			Proposed Action is not of a nature to affect ground water
Wetlands/Riparian areas		X		Riparian areas may be affected
Wild Horses and Burros		X		Individual horses may be impacted
Wild and Scenic Rivers			X	Resource is not present
Wilderness		X		May be impacted by risk of motorized trespass

In addition to the mandatory issues for consideration, the BLM considers other resources that occur on public lands or issues that may result from the implementation of the Proposed Action. The potential resources, uses and issues that may be affected are listed

in Table 3. A brief rationale for either considering or not considering the issue or resource further is provided. The resources and issues that are considered in the EA are described in the Affected Environment section of this document and are analyzed in the Environmental Consequences section.

Additional resources and considerations to be addressed in this section were determined during internal scoping with the approving official.

Table 3. Other Resources and Issues Requiring Detailed Analysis of Potential Impacts and Rationale for Analysis

Resource or Issue	No Effect	May Affect	Not Present	Rationale
Fire Management		X		Proposed Action may increase the spread of weeds and the risk of human-caused wildland fire
Land uses (Rights of Way/ Withdrawls/ Classifications)		X		Conflicts may occur between Trail users and right of way holders/private land owners
Livestock Grazing/Range		X		Livestock grazing and range improvements may be affected
Minerals		X		Conflicts may occur between mine transport and Trail users
Recreation		X		Some conflicts may occur between recreational user groups
Soils		X		Soils may become compacted or vulnerable to erosion as a result of OHV use
Vegetation		X		Localized vegetation health and presence may be affected
Wildlife		X		Localized wildlife abundance, distribution and diversity may be affected by the Proposed Action

3.2 Air Quality

Air quality is assessed by the presence of six common pollutants – sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), leads, ozone (O_3) and suspended particulate matter (PM). PM is differentiated in two classes: particle sizes less than 2.5 microns ($PM_{2.5}$) and particle sizes less than or equal to ten microns (PM_{10}).

The Nevada Bureau of Air Quality Planning Trend Report (2003) suggests that there are no air quality pollution issues within the project area. 1997 data from air quality monitoring sites in Baker, Nevada (located approximately 50 miles northeast of the project area) indicates a PM_{10} mean concentration level of 6μg/m^3, which is substantially below the Environmental Protection Agency (EPA) annual mean standard threshold of 50μg/m^3 (Nevada Bureau of Air Quality Planning, 2003). The project area is approximately 70 miles north of Clark County, Nevada, which is currently a Non-attainment Area for the EPA PM_{10} Standard (A.S.L. Associates, 2006).

Particulate matter includes the solid particles and liquid droplets suspended in the air. While sources of PM include smokestacks and vehicle exhaust, the largest single source is unpaved roads (Ferguson, Downs and Pfost, 1999). "Fugitive dust" is made up of the PM_{10} fine soil particles suspended in the air by wind action and human activities that do not originate from a specific point (Ferguson, Downs and Pfost, 1999).

Generally, soil susceptibility to wind erosion and fugitive dust conditions is determined by soil texture and topography. Heavy clay soils are less susceptible to wind erosion than silty soils (Ferguson, Downs and Pfost, 1999). Trails and roads over the project area are predominantly unpaved and traverse over soils that range from coarse gravel to heavy clay to fine particulate silt and loam.

3.3 Flood Potential, Surface Water Quality, Riparian Areas and Wetlands

Annually, between five and 14 inches of precipitation, in the form of rain and snow, falls on the basins and mountains of the project area, respectively. As many as 23 springs and seeps discharge adjacent to the project area, of which six springs have been confirmed to have flow channels that intersect the project area.

Precipitation and spring discharge adjacent to the project area creates at least 250 intermittent streams (defined as those that flow only at certain times of the year when receiving water from springs or from surface sources such as melting snow in mountainous areas), while 14 are defined as washes that are usually dry but contain water after rainstorms or snowmelts. One stream in the project area (associated with Littlefield Spring) flows perennially.

The soil survey attributes of flood frequency and duration provide information about the probability of the temporary covering of the soil surface by overflow of streams or by runoff from adjacent slopes. These characteristics may be considered indicators for areas with floodplain characteristics. Some locations in the Trail area have an "occasional" probability of annual floods, defined as "flooding occurs infrequently under normal weather conditions (the chance of flooding is five to 50 percent in any year)" (Merkler, 2000, p.27). Several locations in the Trail area have a "rare" probability of annual floods, defined as "it is unlikely but is possible under unusual weather conditions (the chance of flooding is nearly zero percent to five percent in any year)" (Merkler, 2000, p.27). Both

occasional and rare flood frequency areas have a probable "very brief" duration lasting less than two days.

Riparian areas and their associated plant communities occur throughout the project area near these seeps, springs and long sections of frequently flowing intermittent streams. There are at least five fenced riparian areas adjacent to the project area. Soil surveys of the project area suggest that "partially hydric" soil characteristics occur near multiple areas (USDA-NRCS, 2007).

3.4 Soils and Vegetation

The project area covers elevations from approximately 4,600 feet to 7,600 feet on geology typical of the Basin and Range Physiographic Province, with relatively narrow north-south trending mountain ranges separated by wider alluvium-filled basins; soils are associated with these geologic and hydrologic characteristics. Although the vegetative communities on these soils vary considerably, vegetation land cover classes can be grouped by similarities into "ecological system classes" based on the National Vegetation Classification System and modified by the Southwest Regional GAP project (SW ReGAP). The following descriptions of the soil and vegetation characteristics of the project area are based on the SW ReGAP ecological system, as described by USGS GAP (2005).

The majority of the project is nested between mountain ranges in mid-elevation basins, covered by deep, well-drained, coarse-gravel to fine-sand, non-saline soils with big sagebrush-dominated shrubland vegetation communities. Some alluvial slopes of the basin are mixed salt desert scrub ecological systems, with saline and calcareous, medium- to fine-textured, alkaline soils supporting salt-tolerant vegetation such as shadscale saltbrush, fourwing saltbrush and spiny hopsage.

On alluvial fans, alluvial remnants and flats are shrub steppe communities of Indian ricegrass and blue grama with a mixture of shrubs and dwarf-shrubs growing on moderate to deep, gravelly loam to very fine silty loam soils. At the lowest elevations are intermittently flooded playas with an impermeable soil subhorizon, salt crusts and sparse vegetation that may include iodinebrush or greasewood.

As the project area ascends from the basin to the range, it crosses saddles and ridges, rocky hill slopes and rolling hills over shallow, rocky, non-saline soils vegetated with xeric mixed sagebrush shrubland communities of black sagebrush and little sagebrush.

On the on warm, dry mountain slopes, plateaus and ridges covering a large portion of the project are Great Basin pinyon-juniper woodland communities dominated by Utah juniper and singleleaf pinyon pine on deep to shallow, stony, sandy loam soils. At the montane and subalpine elevation ridges are stony flats and deep, rocky to fine soils with mountain sagebrush and desert bitterbrush vegetation.

At least five fenced riparian areas occur adjacent to the project area, and soil surveys suggest "partially hydric" soil characteristics occur near multiple areas. Riparian vegetation may include black cottonwood, quaking aspen, willows, woods' rose, sedges, rushes and rabbit brush.

3.4.1 Distinctive Soils in the Project Area

In isolated parts of the Trail are two types of distinctive soils. First, some soils in the far southern region of the Trail have characteristics associated with high agricultural productivity when the land is irrigated. Second, in the Dry Lake Valley are alluvial areas of fine sandy loam and silt loam soil texture vegetated with white sage, also known as winterfat. These silty soils are characterized by silt particles with low tensile strength that are prone to wind erosion when cultivated or disturbed. When airborne, they can be classified as "fugitive dust" (Ferguson, Downs and Pfost, 1999).

3.5 Fire Management

The Trail passes through nine Fire Management Units (FMUs):

- Bullwhack FMU (NV-040-18)
- Highlands and South Egan Range FMU (NV-040-21)
- Southern Benches – Vegetation FMU (NV-040-04)
- Southern Benches – High Value Habitat FMU (NV-040-14)
- Northern Valleys FMU (NV-040-08)
- North Pahroc and Pahranagat FMU (NV-040-17)
- Southern Valleys FMU (NV-040-07)
- Lincoln County Wildland-Urban Interface FMU (NV-040-09)
- Clover/Delamar/South Pahroc/Irish FMU (NV-040-20)

In most of these FMUs, fire regimes have been significantly altered from their historical range (moderately altered in the Clover/Delamar/South Pahroc/Irish FMU). Fires in these areas have increased in frequency and intensity from what historical vegetation and fire cycles would allow.

The fire season runs approximately from May through October, although a few fires have occurred out of season in the Lincoln County FMU. For the most part, fires in these FMUs tend to be lightning-caused and wind-driven, so that live fuel moisture plays a small role in the variability of fire size.

3.6 Noxious Weeds and Invasive Species

Several infestations of noxious weeds and invasive species have been documented and are known to occur within 0.25 miles of project area. Documented noxious weeds include spotted knapweed (*Centaurea stoebe*), dalmation toadflax (*Linaria dalmatica*), salt cedar (*Tamarix* spp.) and Scotch thistle (*Onorpodum acanthium*). Documented invasive species include bull thistle (*Cirsium vulgare*).

Spotted knapweed and dalmation toadflax are classified as Category "A" weeds on the Nevada Noxious Weed List and are targeted for eradication (Nevada Department of Agriculture, 2005). Spotted knapweed has been documented along the northern sections of the Patterson Pass area, at the northeastern access points on the Fairview Range, near the access points and proposed Stampede Trailhead in the Pioche area and at the eastern origin of Deadman Crossing. Dalmation toadflax has been documented in Pioche near the proposed Stampede Trailhead.

Scotch thistle is classified as a Category "B" weed on the Noxious Weed List and is targeted for control where populations are not well established or previously unknown to occur. It has been documented in the northeastern area near Lower Fairview Spring, near the access points in the Pioche area and on the southeastern section of the Trail near Delamar Mountain.

Salt cedar is classified as a Category "C" noxious weed, and is considered established and generally widespread in many counties of the state. Abatement is at the discretion of the state quarantine officer (Nevada Department of Agriculture, 2005). It has been documented in the west central sections of the Trail near Hamilton and Deadman Springs and near the Caliente area on the Caliente Access Road.

The invasive species bull thistle (*Cirsium vulgare*) has been documented along the northern section of the Patterson Pass area and near Meloy Spring.

Other weeds of concern known to occur in the project area include hoary cress (*Lepidium draba*), tall whitetop (*Lepidium latifolium*), Russian knapweed (*Acroptilon repens*), Russian thistle (*Salsola kali*), Russian olive (*Elaeagnus angustifolia*), and halogeten (*Halogeten glomerus*).

The invasive annual grasses cheatgrass (*Bromus tectorum*), and red brome (*Bromus rubens*) are scattered throughout the project area.

3.7 Range and Livestock

Livestock have historically grazed throughout the Trail area. Table 4 describes the 19 allotments adjacent to, and intersecting the Trail area. With Range Improvement Program (RIP) data and field reconnaissance, multiple range improvements have been identified that are adjacent to, or intersect, the Trail. These include:

- 12 pipelines
- 15 wells, windmills, troughs or ponds
- 13 fences
- 18 existing cattleguards
- 11 proposed cattleguards
- 5 riparian areas

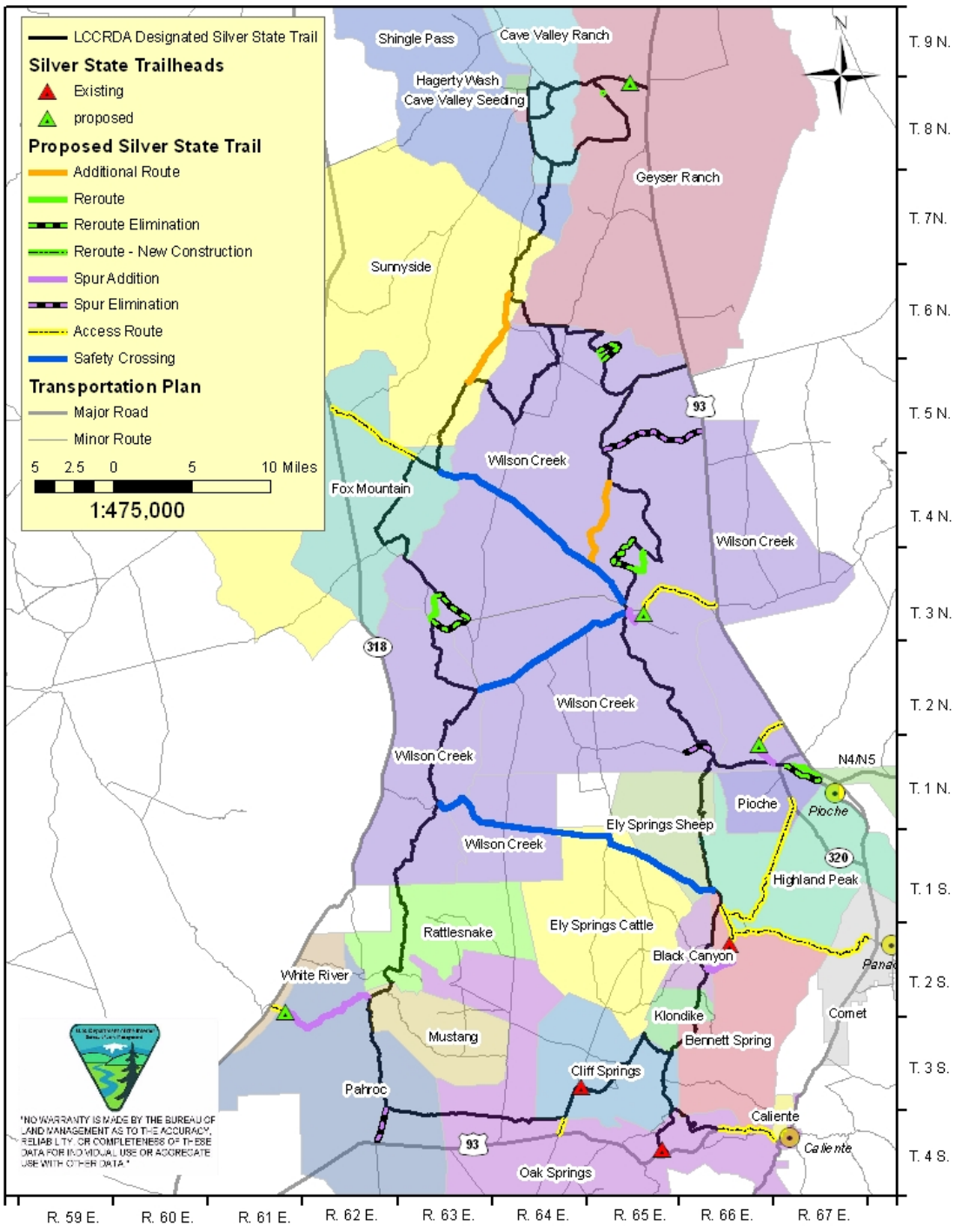
Site-specific range improvement data is available at the BLM Ely District BLM office.

Grazing in all listed allotments is in accordance with federal regulations as identified on existing permits. The grazing permits are as follows for those allotments intersecting or adjacent to the project area:

Table 4. Allotments and Utilization Within the Project Area

Allotment name	Active Cattle AUMs	Active Sheep AUMs	Period of Use
Bennett Spring	194	0	6/15 to 10/15
Black Canyon	0	1105	10/16 to 4/30
Cave Valley Ranch	34059	14191	3/1 to 2/28
Cliff Springs	2043	0	3/1 to 2/28
Comet	214	0	3/1 to 2/28
Ely Springs Cattle	4248	0	3/1 to 2/28
Ely Springs Sheep	1802	0	10/16 to 5/15
Fox Mountain	403	5919	11/1 to 4/10
Geyser Ranch	12308	0	3/1 to 2/28
Highland Peak	0	3704	10/16 to 5/15
Mustang	1134	0	3/1 to 2/28
N4/N5	4248	0	3/1 to 2/28
Oak Springs	0	1180	10/16 to 5/30
Pahroc	0	1105	10/16 to 4/30
Pioche	0	1802	10/16 to 5/15
Shingle Pass	825	0	3/1 to 2/28
Sunnyside	0	3498	10/16 to 4/30
Wilson Creek	0	3704	10/16 to 5/15
Wilson Creek	4783	0	3/1 to 2/28
Wilson Creek	9268	0	3/1 to 2/28
White River	501	0	3/1 to 5/15 And 10/1 to 2/28

Map 14. Allotments in the Project Area



3.8 Wild Horses

Wild horses are an introduced species with too few natural predators to sufficiently control the population, making them very competitive with native wildlife, other living resources and livestock permitted to graze where horses are present.

The Trail crosses through three Herd Management Areas (HMAs) – Dry Lake, Highland Peak and Rattlesnake – that together make up the Dry Lake Complex. The wild horse herd in these HMAs is managed as a single population. Wild horse gathers are conducted periodically in order to maintain horse populations at AML. Capture techniques used for horse gathers generally consist of helicopter-drive trapping and/or helicopter-roping from horseback, in addition to traps. Capture sites are located in previously disturbed areas; sage-grouse leks, riparian areas, cultural resource sites and wilderness areas are avoided.

During gathers, helicopters are likely to fly over the Trail, and horses may be herded across the Trail. BLM and contract personnel participating in gathers may also drive along roads designated as sections of the Trail in order to accomplish their objectives. At other times, Trail users are most likely to encounter wild horses along Highland Peak and Muleshoe Valley, where a September 2006 survey indicated that wild horse use is heavy. The same study indicated moderate use by wild horses in the remainder of the Dry Lake Complex.

One area of concern for horses on the Trail is related to the availability of water at North and South Mud Springs. South Mud Spring and the associated riparian area are enclosed by a riparian fence so that horses cannot water there. Nearby North Mud Spring is developed with a trough, but the trough is located in a burn area from the 2006 Peers Fire, along a small pull-off adjacent to the Trail, which would be an appealing place for Trail users to stop. Such recreational use in an area lacking foliage would leave horses without cover and, when Trail users are at the trough, unable to access water.

Another area of concern is Bailey Spring, where horses regularly water and where the historic structures present may serve as attractions for Trail users to stop, which may then disturb the horses.

3.9 Wildlife, Migratory Birds and Special Status Species, Including Plants

3.9.1 Sensitive Species

The following species are not considered "Threatened and Endangered," but they are Nevada BLM Sensitive Species and are monitored by the Nevada Natural Heritage Program (NNHP) as State Species of Concern. These species have been recorded within one mile of the project area.

The vascular plant species long-calyx eggvetch (*Astragalus oophorus* var. lonchocalyx) occupies pinyon-juniper, sagebrush and mixed desert shrub communities (NNHP, 2001)

and has been historically observed in the east-central region of the project. It is classified as a BLM Nevada Sensitive Species (designated Sensitive by the State Office) (NNHP, 2004).

Parish phacelia (*Phacelia parishii* A. Gray) is a vascular plant species that occupies moist to superficially dry, open, flat to hummocky, often salt-crusted silty-clay soils on valley bottom flats, lake deposits and playa edges, often near seepage areas and sometimes on gypsum deposits (NNHP, 2001). It is classified by the Nevada BLM as a sensitive vascular plant species in Nevada. It has recently been observed within one mile of the far northeastern region of the project.

Pioche blazingstar (*Mentzelia argillicola*) is a vascular plant classified as a BLM Nevada Sensitive Species (designated Sensitive by the State Office) (NNHP, 2004). It has been historically observed within one mile of the project, near the town of Pioche.

Rock purpusia *(Ivesia arizonica* var. saxosa) is a vascular plant classified as a BLM Nevada Sensitive Species (designated Sensitive by the State Office) (NNHP, 2004). It has been historically observed near the project on the Pahroc Summit Spur. It occupies crevices of cliffs and bounders on volcanic rocks in sagebrush and pinyon-juniper vegetation.

Rayless tansy aster (*Machaeranthera grindelioides* var. depressa) is a vascular plant classified as a rare, restricted range species on the NNHP Watch List (NNHP, 2001). It occupies calcareous or carbonate rocky ridges and slopes under diverse vegetation communities. It has been historically observed on the Pioche South Access Road near the Trail.

The flag spring snail (*Pyrgulopsis breviloba*) is a BLM Nevada Sensitive Species (designated Sensitive by the State Office). Spring snails occur in aquatic environments including springs, seeps and marshes, and prefer firm substrates such as cobble, rocks, woody debris and aquatic vegetation (Martinez and Thome, 2006). They are dependent on appropriate water temperatures, water chemistry and flow regimes of the spring emerging from the ground as a free-flowing stream. They have been historically observed in Meloy Spring in the northeastern region of the Trail area.
Desert bighorn sheep (*Ovis canadensis*) occupy the mountainous habitat along the western portion of the project area, and potentially occupy range in the east-central portion of the project area. Current populations adjacent to the Trail are in the South Pahroc, North Pahroc and Schell Creek Ranges. Bighorn sheep could cross sections of the Trail while dispersing between mountain ranges.

The pygmy rabbit (*Brachylagus idahonsis*) is a BLM Nevada Sensitive Species (designated Sensitive by the State Office), and is associated with dense stands of big sagebrush growing on deep, loose soils (NDOW, 2005). Studies suggest that OHV use can modify habitat by disturbing vegetation and soil and by changing microclimates (Hickman et al., 1999). Pygmy rabbits have recently been identified in biological surveys

within 0.25 miles of east-central and west-central sections of the project area in Muleshoe Valley.

The ferruginous hawk (*Buteo regalis*) is a BLM Nevada Sensitive Species (designated Sensitive by the State Office). It nests in juniper trees while preying on small animals in the sagebrush and desert scrub key habitats (NDOW, 2005). They have been seen throughout the project area with nests surveyed within 0.25 miles of the east-central region of the project area.

The greater sage-grouse (*Centrocercus urophasianus*) is a BLM Nevada Sensitive Species (designated Sensitive by the State Office). Sage-grouse are sagebrush obligates, occurring in foothills, plains and mountain slopes where sagebrush is present. Leks (i.e. breeding or strutting grounds) are located on relatively open sites surrounded by sagebrush, or in areas where sagebrush density is low, such as exposed ridges, knolls or grassy swales. Quality of adjacent nesting and brood rearing habitat is an important factor in lek choice. Sage-grouse have high seasonal site fidelity, and often return to the same leks year after year. Habitat for early brood rearing is critical for the survival of chicks. Nests are on the ground under low-growing sagebrush bushes enhanced with thick bunchgrass understory (NDOW, 2005). NDOW monitors several leks in the northern end of Cave Valley and in Lake Valley near the project area.

The long-eared owl (*Asio otus*) is a BLM Nevada Sensitive Species (designated Sensitive by the State Office) that has been identified in the far southeast region of the project area in the Delamar Mountains. It hunts nocturnally for small mammals and birds, and nests in pinyon and juniper trees, using the old stick nests of other birds such as crows, ravens, magpies and various hawks.

3.9.2 Game Animals

Big-game mammals, including Rocky Mountain elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana americana*) and desert bighorn sheep occur throughout the project area.

Rocky Mountain elk yearlong habitat occurs over all of the project area except at the lower elevations of Dry Lake Valley. Winter habitat for elk is concentrated in the higher elevation northern and western areas of the project.

Mule deer occupy all of the project area except Dry Lake Valley. Generally, they summer at higher elevations, including Patterson Pass and the Schell Creek Range, and they winter at lower elevations, following the snow line throughout the mountain-valley periphery of the project region.

Pronghorn antelope habitat occurs throughout Cave and Dry Lake Valleys. Pronghorn are widely distributed on benchlands, showing preferences for communities with a mixture of sagebrush, shadscale, forbs and grasslands. The big sagebrush-pronghorn bitterbrush communities are preferred during summer and fall seasons.

There are two guzzlers located within 0.25 miles of the project area: the West Range Deer guzzler in the northern West Range and the White River Narrows small game guzzler located in the central North Pahroc Range. The West Range Deer guzzler is located on the designated Trail in mule deer winter range habitat, but is not functional and is not scheduled to be repaired by NDOW in the foreseeable future.

3.9.3 Wildlife Communities

The project area provides habitat for small mammals, birds (including migratory birds), reptiles, amphibians and insects common to the Great Basin. Habitat associations or "Key Habitats" can be used to predict wildlife distribution, and while developing the *Comprehensive Wildlife Conservation Strategy*, NDOW identified non-game birds, mammals and reptiles of "Conservation Priority" for each Key Habitat within Nevada (NDOW, 2005). The project area is dominated by the sagebrush key habitat, with large areas of lower montane woodlands, and basin and desert scrub Key Habitats as well.

The prevalent sagebrush communities of the project area are key habitats that support sagebrush obligate species of conservation priority that include the pygmy rabbit, Great Basin pocket mouse, sagebrush vole, sagebrush lizard and greater sage-grouse. Predators feeding on species in this habitat include the ferruginous hawk, golden eagle, bald eagle, kit fox, desert horned lizard and greater short-horned lizard.

Migratory birds associated with sagebrush communities in the project region include the sage thrasher, sage sparrow, Brewer's sparrow and Wilson's phalarope.

Species that have been identified through surveys and monitoring of sagebrush communities in the project area include the pygmy rabbit, bobcat, Great Basin spadefoot toad, long-eared owl, greater sage-grouse and the Great Basin collared lizard.

The pinyons and junipers of the lower montane woodlands that cover mountain slopes and rocky outcrops of the project area are key habitats and support woodland-dependent species of conservation priority that include the ferruginous hawk. The evergreen cover provides structure for nesting and roosting of various bats and birds and feed for the pinyon jay and pinyon mouse. Migratory birds associated with pinyon-juniper woodlands of the project region include the gray flycatcher, the gray vireo and the yellow-breasted chat. Species that have been identified through surveys and monitoring in lower montane woodland communities of the project area include the ferruginous hawk, the pouch snail and the fingernail clam.

The salt-tolerant shrubs and Indian ricegrass in valley bottoms throughout the project area compose the intermountain cold desert scrub key habitat. Several species of conservation priority, including the kit fox, pale kangaroo mouse, and loggerhead shrike, depend on the loose soil of this habitat type, and numerous hawks, bats and lizards feed on species in this habitat. Migratory birds associated with desert scrubland include the green-tailed towhee, the vesper sparrow and the black-throated sparrow.

The southernmost region of the Trail is in the Great Basin-Mojave transition zone, characterized by Joshua trees and blackbrush. The Bendire's thrasher and desert night lizard are species of conservation priority dependent on the Joshua tree. Other species using the vegetation, soils and rock outcrops of the region include the Crissal thrasher, Panamint kangaroo rat, black-chinned sparrow, banded gila monster and chuckwalla.

Carnivores hunting throughout the project area include skunks, raccoons, kit and gray foxes, ringtails, bobcats and mountain lions.

3.10 Archaeological Resources and Historic Properties

Archaeological resources include prehistoric and historic period sites, features and artifacts which may range in complexity from a single stone tool or bottle fragment to a large prehistoric village or historic-period town site. Archaeological sites are the locations of past human activity, occupation or use, identifiable through inventory, historical documentation, or oral history.

Numerous archaeological and historic resources are present in proximity to the Proposed Action. An analysis of sites within 0.25 miles of the Proposed Action indicates that these nearby site types include lithic and pottery scatters, prehistoric rock art, petroglyphs, historic homesteads, other signs of historic mining and ranching, and numerous archaeological and historic isolated artifacts. An analysis of sites within 100 feet of the Proposed Action indicates that site types adjacent to the Proposed Action include lithic scatters, isolated historic artifacts and historic structures. Other important historic resources include a historic railroad bed that intersects with proposed changes to the designated Trail in the Pioche area and a section of historic road in the vicinity of Roadside Spring.

3.11 Minerals

The existing Trail crosses patented mine property in three areas: the Ely Valley Mine property just north of Pioche, the Silver Horn Mine property north of Bristol Well and the Pan American Mine property on the west side of the Highland Range. The sections of Trail through these properties are designated on bladed roads.

Active oil and gas leases and mine claims exist within a mile of the existing Trail in the following township-range areas:

- T. 7 N, R. 64 E
- T. 5 N, R. 62 E
- T. 5 N, R. 63 E
- T. 4 N, R. 62 E
- T. 4 N, R. 65 E
- T. 3 N, R. 65 E
- T. 1 N, R. 66 E
- T. 1 N, R. 67 E
- T. 1 S, R. 66 E
- T. 4 S, R. 67 E

Active oil and gas leases and mine claims exist within a mile of the proposed new routes in the following township-range areas:

- T. 6 N, R. 63 E
- T. 5 N, R. 62 E
- T. 3 N, R. 63 E

The Pioche community gravel pits receive frequent use from citizens, NDOT and the Town of Pioche, and they are located at the site of the proposed Stampede Trailhead.

3.12 Land Ownership and Rights of Way

There are two large rights of way, one designated corridor and several privately-owned land parcels that intersect the project area. NDOT maintains small rights of way in various areas along the Trail.

As shown in Map 15, the following entities have designated rights of way in the project area:

- Southwest Intertie Project (SWIP): a 500 kilovolt north-south transmission line
- Lincoln County Water District (LCWD): a water pipeline

LCCRDA has designated a utility corridor that intersects the area of the Proposed Action.

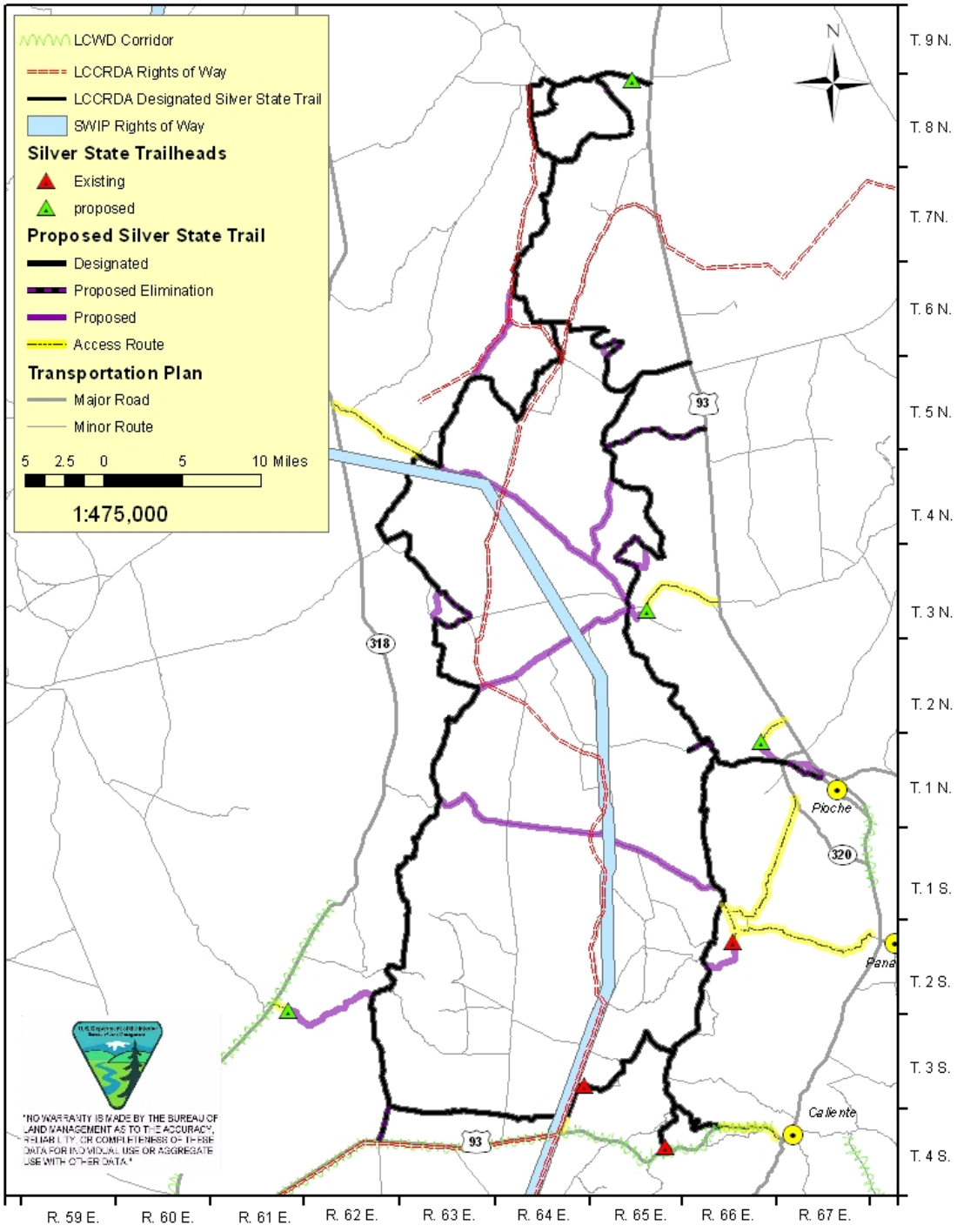
The following Proposed Action Trail components intersect privately-owned or patented land on county-owned roads:

- Coyote Crossing: One holding in the western region at T. 2 N, R. 63 E, sec. 13
- Bristol Well Spur: The primarily county-owned Bristol Well townsite at T. 3 N, R. 65 E, sec. 21
- Ely Valley Reroute: One holding at T. 1 N, R. 67 E, sec. 16
- The proposed Deadman Crossing runs adjacent to one holding at T. 1 S, R. 65 E, sec. 5

The following No Action alternative Trail components intersect privately-owned or patented land on county-owned roads:

- The section intersecting the Silverhorn Mine, potentially replaced by the Silverhorn Reroute: Two holdings at T. 4 N, R. 65 E, sec. 33 and T. 3 N, R. 65 E, sec. 4
- Meloy Spur: One holding at T. 5 N, R. 65 E, sec. 25
- Ely Valley Route, potentially replaced by the Ely Valley Reroute: Three total holdings, with two holdings at T. 1 N, R. 67 E, sec. 16 and one holding at T. 1 N, R. 67 E, sec. 17

Map 15. Land Ownership and Rights of Way in the Project Area



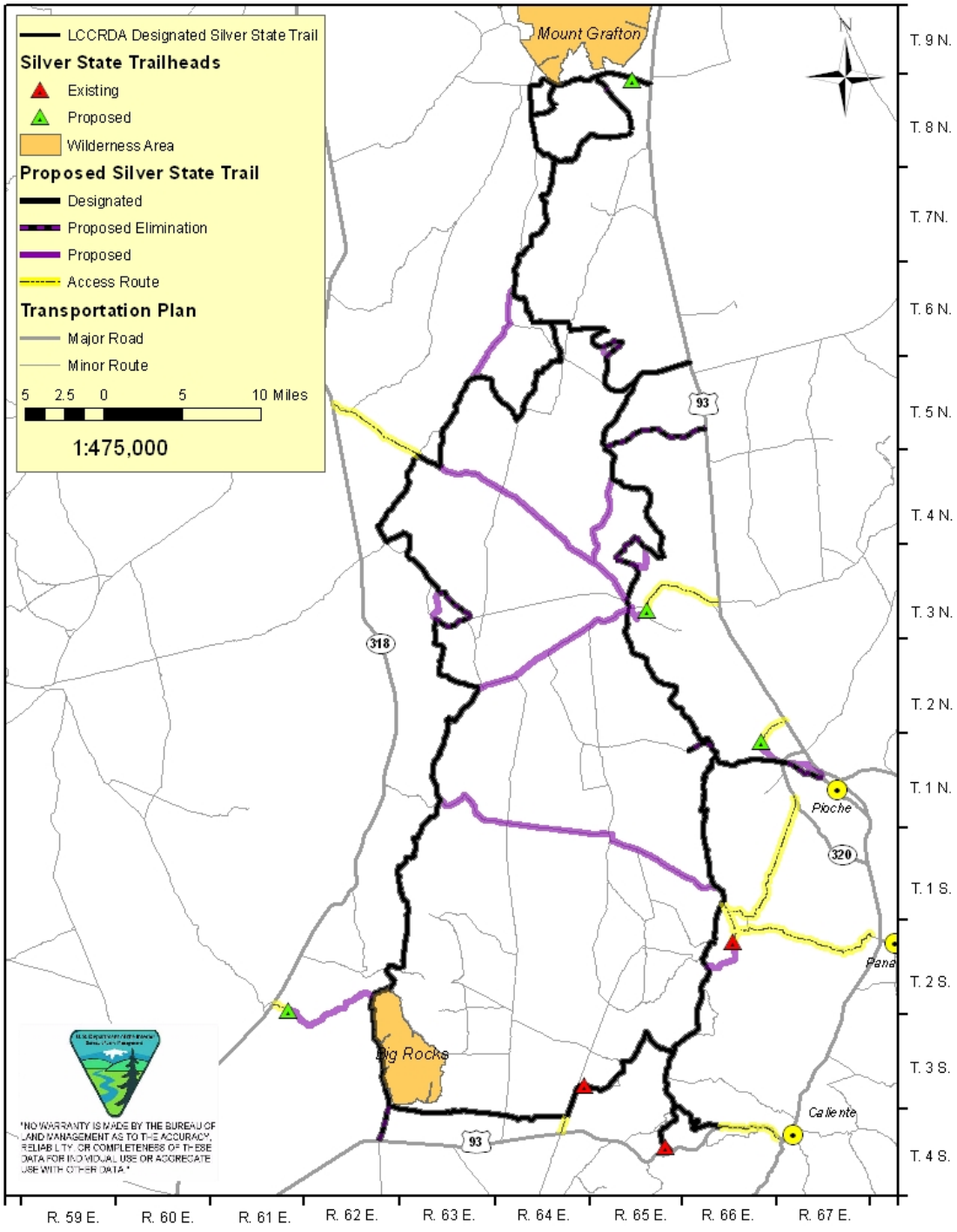
3.13 Wilderness

Wilderness is defined by the Wilderness Act of 1964 as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Wilderness characteristics are described under five categories: untrammeled, naturalness and primeval character, undeveloped, outstanding opportunities for solitude or a primitive unconfined form of recreation, and other features of scientific, educational, scenic, or historical value.

The 78,754-acre Mount Grafton Wilderness is located in proximity of the Trail, just north of Patterson Pass. The 12,997-acre Big Rocks Wilderness is located in the southwest region of the Trail, which runs adjacent to the wilderness boundary for approximately six miles.

Both wilderness areas possess attributes that may provoke the interest of visitors. The Big Rocks Wilderness, in particular, is attractive for its rock art, Desert bighorn sheep and unique boulder fields. Additionally, the Big Rocks Wilderness is host to a bouldering area known to the rock climbing community as Mecca. At present, the area sees little use, although the climbing community is aware of its existence. The Mount Grafton Wilderness is attractive for its extensive stands of quaking aspen, its conifer species including white fir, limber, bristlecone pine, as well as its populations of elk and Rocky Mountain bighorn sheep.

Map 16. Wilderness Designations in the Project Area



3.14 Visual Resource Management

Visual Resource Management (VRM) takes visual values for an area into account in order to establish management objectives and actions. Visual resources contribute to peoples' enjoyment when using an area and may be unique or unusual landscapes of natural scenic value.

The area of the Trail is characterized by clear skies and broad, open landscapes. Austere, craggy mountains support pinyon-juniper forests, while sagebrush and grasses cover expansive valleys. Notable natural features dot the landscape around the Trail, including stark Burnt Peak, the unique rocky environment of the Big Rocks Wilderness and a Joshua tree forest that extends into the southern reaches of Dry Lake Valley.

The Trail passes through visual resource classes two, three and four. Management objectives for Class Two viewsheds revolve around retaining the existing character of the landscape by managing for activities that do not attract the attention of the casual observer. For Class Three viewsheds, management objectives involve partial retention of the existing character of the landscape; management activities should not dominate the view, but may attract the attention of the casual observer. Management objectives for Class Four viewsheds allow for major modifications to the character of the existing landscape. While every effort should be made to minimize visual impacts of management activities, these activities may dominate the view of the landscape and be the major focus of viewer attention.

3.15 Recreation

Current recreational uses in the project area include hunting, trapping, antler collection, OHV use, OHV races, heritage tourism, camping, hiking, bouldering and wildlife and wild horse viewing. Visitation has not been monitored in this area, so no specific data on recreational use exists.

The roads associated with the Proposed Action have traditionally been used for recreational purposes by hunters, trappers and some OHV enthusiasts. Car camping occurs along some of the roads associated with the Proposed Action, and numerous traditional campsites exist in the area. While most recreational OHV use in the project area is associated with hunting and trapping, several OHV races have been held on the roads associated with the Proposed Action.

Heritage tourism occurs in proximity to the Proposed Action, predominantly for rock art in the Big Rocks Wilderness and the historic structures in the Bristol Well area. Other opportunities for heritage tourism along the roads associated with the Proposed Action include the historic structures at Bailey Spring and Griswold Well, as well as sections of historic roads and railroad beds.

Hiking occurs mostly in the Mount Grafton and Big Rocks Wilderness Areas. Both backcountry and car camping occur in and near these areas, respectively.

Bouldering, "the practice of climbing on small rock formations or boulders that are short enough in height that ropes and gear are not necessary," is an established use in the area known to the climbing community as Mecca, within the Big Rocks Wilderness (Access Fund 2006, p. 3). At present, the area sees little use, although the climbing community is aware of its existence. Climbers use the Pahroc Summit Spur, which is currently part of the designated Trail but is proposed for elimination, to access staging and parking areas for bouldering at Mecca. Car camping occurs in association with bouldering activities, but it tends to be concentrated 0.25 to 0.5 miles from the Trail.

3.16 Wastes

Some human waste and trash may occur in the project area. No other known sources of hazardous or solid waste exist in the Trail region.

4. Environmental Consequences

4.1 Consequences of the Proposed Action

4.1.1 General Consequences

Increased ease of OHV access and amenities for recreation provided by the Proposed Action would cause increased use along the Trail, proposed routes and proposed trailheads.

Because the Proposed Action would designate as part of the Trail specific roads that cross the valleys and create loop opportunities, Trail users would focus their activity on these roads (under the No Action alternative, Trail users would disperse their use out along many different roads to create their own loop opportunities in order to return to their starting points). Similarly, the Proposed Action would focus camping at trailheads, whereas the No Action alternative would encourage Trail users to disperse around the Trail and camp in existing primitive campsites or create their own new campsites. Overall, the focused use encouraged by the Proposed Action would cause fewer and more predictable impacts to natural and cultural resources than would the dispersed use of the No Action alternative.

Additionally, it can be expected that, with the exception of eliminations from the designated Trail, user-created and social trails would form along the roads and disturbed areas (such as trailheads and interpretive stops) associated with the Proposed Action. User-created trails are illegal routes created by OHVs leaving designated roads, trails and parking areas. Social trails are foot-worn hiking paths. These user-created and social trails could result in a variety of impacts to natural and cultural resources. These trails would, however, be monitored regularly in accordance with the Trail Monitoring Plan (see Appendix A), and they would be rehabilitated as soon as possible.

Focused versus dispersed use, user-created trails and social trails would all have a variety of impacts, both positive and negative, on multiple natural and cultural resources. These will be discussed in detail below.

4.1.2 Air Quality

Increased use of routes associated with the Proposed Action could impact local air quality through the increased local generation of fine particulate matter in the form of "fugitive dust" (EPA, 2001). Fugitive dust has been associated with decreased plant photosynthesis, respiration and transpiration in local plant communities (Spellerberg, 1998).

Fugitive dust generation is likely to occur where the indicator plant white sage, or winterfat, occurs. Winterfat surrounds small sections of the proposed Coyote Crossing in central Dry Lake Valley, and small sections of Muleshoe Crossing in central Muleshoe Valley. Increased fugitive dust generated by OHVs near the project area may affect

forage for livestock, wildlife and horses. Increased fugitive dust may disturb nearby plant communities, which may contribute to weed establishment and an associated increased risk of wildfire. Increased fugitive dust may also affect local recreational activities such as hunting, wildlife and wild horse viewing, and heritage tourism.

Low-level temporary impacts to air quality may occur from the burning of slash piles associated with the construction of the Patterson Trailhead.

4.1.3 Flood Potential, Surface Water Quality, Riparian Areas and Wetlands

The crossings, reroutes, additional routes and access roads of the Proposed Action cross, or are adjacent to, numerous ephemeral waterflows and springs or partially hydric soil features. Several of these areas are likely to support riparian vegetation and temporary aquatic communities, which could occasionally be affected with trampling, disturbance, and increased sedimentation by increased OHV use.

A proposed route crosses the perennial Littlefield Spring water crossing, where water quality could be affected by increased sedimentation which may inhibit or kill aquatic communities (Douglass et al., 1999). However, the installation of culverts at Littlefield and Bailey Springs could decrease impacts to riparian vegetation caused by OHVs and could decrease soil sedimentation in the waterflow. The installation of rock-bottom crossings at Milk Ranch and South Rosebud Springs could decrease impacts caused by OHV use to riparian vegetation, could decrease sedimentation in the waterflow and could prevent the alteration of waterflows from natural channels.

Under the Proposed Action, the Meloy Spur would be eliminated, which could decrease OHV traffic near Meloy Spring. The road at Roadside Spring would be re-routed around Roadside Spring, which could prevent damage to the riparian vegetation and water quality.

According to the National Resources Conservation Service soil survey (USDA-NRCS, 2007), Proposed Action areas with “occasional” flood frequency include the far-western section of Deadman Crossing, and areas with “rare” flood frequency include portions of the Ely Valley Reroute and the Stampede Trailhead and Spur. Proposed elimination sections with rare flood frequency include the section of existing road removed by the Burnt Peak Reroute. Both occasional and rare flooding would be of “very brief duration,” lasting for less than two days (Merkler, 2000). Such flooding may pose a safety risk if it occurs without warning to Trail users.

The Proposed Action would be implemented in a way that would minimize Trail user impacts to water quality, riparian areas and wetlands, and it would meet the standards developed during watershed analysis.

4.1.4 Soils and Vegetation

Increased OHV use on roads associated with the Proposed Action could cause increased soil erosion, compaction, rutting and displacement, and contribute to disturbance of

vegetation adjacent to, and surrounding these roads (Douglass et al., 1999). These impacts may be notable on unimproved, two-track roads with slopes greater than a moderate slope of 15 percent (as suggested from work by Tuttle and Griggs, 1987 and Wilshire et al., 1978). Proposed Action sections with steep slopes and rut-prone soils include small sections of the unimproved, two-track roads in the Silverhorn Reroute, Roadside Spring Reroute and Caliente Access Route.

Under the Proposed Action, the Roadside Spring existing route would be replaced with a newly-constructed route around Roadside Spring. Such new construction would be associated with temporarily increased soil erosion, soil and vegetation disturbance and compaction around the newly-constructed route, as well as destruction of the original vegetation. However, the new route and rehabilitation of the existing route would protect the soils and riparian areas in the long term.

Up to ten acres of soil and vegetation would be disturbed during the construction of the proposed trailheads. Construction could be associated with temporary soil and vegetation disturbance and compaction around the trailhead sites, and destruction of the original vegetation. Practice areas would be affected by OHV user activity and its associated disturbance to soil and vegetation.

4.1.4.1 Distinctive Soils in the Project Area

Winterfat, also known as white sage, is a strong indicator of wind erodible soil. It surrounds small sections of the proposed Coyote Crossing in central Dry Lake Valley, and small sections of Muleshoe Crossing in central Muleshoe Valley.

4.1.5 Fire Management

Risk of human-caused wildland fire, particularly from OHV sparks, would be reduced on roads eliminated from the Trail by the Proposed Action, but would increase slightly for roads added to the Trail by the Proposed Action. Similarly, the risk of the spread of noxious weeds and invasive plants along roads eliminated from the Trail by the Proposed Action as a result of Trail use would be reduced, while the risk would increase slightly for roads added to the Trail by the Proposed Action. This risk of weed spread would have the potential to further alter the fire regimes in the FMUs crossed by the roads associated with the Proposed Action.

The Roadside Reroute, once constructed, would be wide enough to accommodate large vehicles and fire equipment.

The burning of slash piles associated with the construction of the Patterson Trailhead would require fire management equipment and personnel.

Because sections of the Trail can be closed to protect natural and cultural resources and user safety, Trail use would not hinder fire management projects, wildland fire emergency responses or stabilization and rehabilitation projects.

4.1.6 Noxious Weeds and Invasive Species

A weed risk assessment rated the project as "moderate" and is included in Appendix B. This indicates that "possible adverse effects on sites and possible expansion of infestation within the project area is "expected to occur" and that "preventative management measures for the proposed project to reduce the risk of introduction or spread of noxious weeds into the area" is required (Appendix B).

For the Proposed Action, it is assumed that implementation would lead to an increased intensity of OHV use on the proposed roads and routes, and a greater potential for user-created routes and social trails. These increases may be associated with the disturbance of soil and native plants adjacent to the proposed routes and around trailheads, and the easier movement of weed seed by human vectors. These both contribute to the spread of invasive and noxious weeds (Trombulak and Frissell, 2000). However, the establishment and spread of noxious and invasive weeds would be monitored and treated in accordance with the Trail Monitoring Plan (see Appendix A).

Proposed trailhead development could cause short-term disturbance to soil and vegetation that would facilitate the establishment and spread of noxious weeds and invasive species. Five to ten acres of soil and vegetation would be disturbed during the construction of the trailheads. Construction could be associated with temporarily increased soil erosion, soil and vegetation disturbance and compaction around the trailhead sites, as well as destruction of the original vegetation. Practice areas would be affected by OHV user activity and its associated disturbance to soil and vegetation.

Short-term soil disturbance would occur during the construction of the proposed Roadside Spring Reroute, which could increase the likelihood of noxious weed and invasive species encroachment in these areas.

The establishment and dispersal of noxious weeds and invasive species may increase the risk of wildfire, and could directly affect forage for livestock, wildlife and wild horses. It may affect riparian systems by altering the surrounding vegetation. Weed establishment and dispersal indirectly affects wilderness character and recreational activities such as wildlife viewing and heritage tourism.

4.1.7 Range and Livestock

Under the Proposed Action, the increased use of the proposed routes could impact range and livestock by increasing the risk of damage to nearby range improvements. Livestock access to water sources could be disrupted by Trail users loitering nearby, and rangeland health could be locally decreased through the OHV generation of wind-eroded silty soil in parts of the Proposed Action area. Increased use of proposed routes would also increase the likelihood of Trail users traveling off of nearby designated routes and potentially through grazing allotments, impacting forage quantity and quality and

disrupting cattle. These user-created and social trails would be monitored and rehabilitated as soon as possible.

Proposed Actions such as 11 new cattleguard installations and a water development improvement at North Mud Spring, may decrease the previously discussed effects. The proposed improvement to the fence intersection in Geyser allotment southeast of Roadside Spring could improve range management and prevent conflicts between Trail users and permittees at that location.

4.1.8 Wild Horses

Increased use of roads associated with the Proposed Action may result in some disturbance to the movement of individual wild horses, but in general, populations would not be impacted. Because the Proposed Action contains a provision for temporary closure of sections of the Trail during horse gathers, the Trail would not have an impact on horse management actions related to gathers.

The Proposed Action provides for a secondary trough to be placed 100 yards from the existing trough at North Mud Spring to provide horses with a place to get water that is sheltered from the road and activities of Trail users. Because of this action, horses would have better access to water than under the No Action alternative.

The Proposed Action would increase recreational user traffic at Bailey Spring, which may temporarily displace individual horses.

4.1.9 Wildlife, Migratory Birds and Special Status Species, Including Plants

The increased use of the proposed routes and trailheads may negatively affect wildlife and wildlife habitats with direct and indirect impacts. Direct impacts include increased risk of collision, habitat modification through destruction and disturbance, decreased aquatic habitat quality and the increased presence of human activities such as vehicle use and wildlife harassment. Indirectly, these changes may affect wildlife through increases in noise, habitat modification and human activities (Spellerberg, 1998; Manley et al., 2004).

These direct and indirect changes have been correlated to wildlife behavior modification, displacement and mortality (Trombulak and Frissell, 2000), although the relative importance of these changes varies widely among species and between seasons (Boyle and Samson, 1985). In addition, behavioral modification may be of short duration (temporary displacement) or long-term (Douglass et al., 1999).

It is notable that separating effects of Trail use associated with the Proposed Action from pre-existing road and route use can be difficult if the effect is indirect or the response is not immediate (Boyle and Samson, 1985).

4.1.9.1 Sensitive Species

Ferruginous Hawk, Long-Eared Owl and Migratory Birds
Increased use and user intensity on the proposed routes and trailheads may affect the ferruginous hawk, long-eared owl and migratory birds by altering normal behavior along the proposed trail routes (Miller et al., 1998), although multiple studies demonstrate that avian species react to such effects with a continuum of responses, with habituation at one extreme and local site abandonment at the other (Hamann et al., 1999). The focused, predictable OHV use of the Proposed Action could affect these birds less than the unpredictable, dispersed Trail use of the No Action alternative.

For the proposed trailheads, species sensitive to disturbance by humans may avoid areas where human activity is common, or fewer individuals may use these areas. Studies have reported a negative relationship between the intensity of recreation occurring on trails and campgrounds and the density of avian species, with some species being more sensitive than others (Miller et al., 1998; Boyle and Samson, 1985).

The Proposed Action would be implemented in such a way as to minimize environmental impacts. Construction of trailheads and the Roadside Spring Reroute would not occur between May 1 and July 15 without clearance from a wildlife biologist to prevent disturbance to migratory birds.

Greater Sage-grouse
Leks are the focal point for management of greater sage-grouse, and population declines may result from physical, mechanical or audible disturbances within two miles of breeding complexes during the breeding season (March to early June) in the daily display period (within three hours of sunrise and sunset) (Hamann et al., 1999). The proposed Cave Valley Additional Route along the Cave Valley – Schell Creek Range transition intersects an NDOW-designated sage-grouse nesting/early brood area. The Additional Route is greater than two miles from a documented greater sage-grouse lek and may have little effect on the leks.

The addition of this and other routes and trailheads in the Proposed Action would increase the area affected by the Trail, and could increase the potential for impacts on greater sage-grouse communities by OHV users.

Pygmy Rabbit
As pygmy rabbits characteristically create burrows for nesting and protection in deep, loose soil, their habitat may be disturbed by OHVs driving off of designated roads and routes. Such OHV impacts may result in forage and cover removal, and contribute to mortality by vehicle collision or predation (Hickman et al., 1999).

Pygmy rabbits occur throughout the Trail area and have been documented to occur adjacent to several components of the Proposed Action: at the junction of Muleshoe Crossing with the north-west existing Trail, at the Bristol Well Spur junction with the east-central existing Trail in the Bristol Well townsite area, and adjacent to the eastern

section of Coyote Crossing. It is possible that OHV users would create new routes and social trails in these high use areas. Under the Proposed Action, new routes would be monitored for and rehabilitated as soon as possible.

Desert Bighorn Sheep

Studies suggest that bighorn sheep are susceptible to human disturbance, and increased road use has been associated with changes in habitat use and behavior in bighorn sheep (Canfield et al., 1999). The increased volume of affected roads and routes in the Proposed Action may increase the probability of bighorn encounter by OHVs, which would impact bighorn sheep habitat use. However, the majority of the proposed crossings, reroutes and additional routes are in valleys that do not intersect occupied or potential bighorn sheep habitat. Under the Proposed Action, the Pahroc Summit Spur, adjacent to occupied bighorn sheep habitat, would be eliminated, decreasing the impact of the Trail on the bighorn sheep. In addition, no proposed trailhead areas are occupied or potentially occupied by bighorn sheep.

Flag Spring Snail

The flag spring snail occupies cobble, rocks, woody debris and aquatic vegetation near springheads, and it is threatened by disturbance to springhead integrity (Hershler, 1996). Flag spring snails have been identified in surveys at Meloy Spring, located on the designated Meloy Spur in the east-central region of the Trail. Under the Proposed Action, the Meloy Spur would be eliminated from the Trail, which would eliminate the Trail's impact on the flag spring snail, as no flag spring snails have been identified in other springs or stream crossings intersected by the Trail

Sensitive Plants

Several BLM Sensitive Species and Nevada Heritage Program Watch List species may be affected by the Proposed Action. The long-calyx eggvetch has a historic range, and may be present, near Pioche along the Ely Valley Reroute, the Stampede Spur and at the Stampede Trailhead. Pioche blazingstar has a historic range, and may be present, near Pioche along the Ely Valley Reroute. The rayless tansy aster has been identified on the Pioche South Access Road.

Each species may be affected by increased OHV users on the proposed routes, and by a greater potential for user-created and social trails. Potential OHV use off of designated roads and routes may disturb or destroy established plants, or may affect the surrounding hydrology and soil qualities. User-created and social trails would be monitored and rehabilitated as soon as possible. Increased OHV use near plant populations may increase the potential for invasive weed establishment that could affect the sensitive species communities.

4.1.9.2 Game Animals

Game animals including Rocky Mountain elk, mule deer, pronghorn antelope, desert bighorn sheep and greater sage-grouse occur throughout the Proposed Action area, and

they use much of the Trail region for year-round, summer and winter range. Bighorn sheep and greater sage-grouse have been discussed in the sensitive species section.

It is uncertain whether the assumed increase in OHV use on the proposed routes would impact game animal populations. Direct disturbances associated with OHVs can negatively influence an animal's ability to both retrieve food and conserve energy (Manley et al., 2004). Knight and Gutzwiller (1995) suggest that disturbance that occurs during feeding and at watering locations provokes notable stress or displacement, although the frequency of, and distance from, the OHV encounter may also influence the mammal response. With high variability between studies and responses, it is unclear if any of these effects have acute or long-term effects on game mammals (Manley et al., 2004).

The Burnt Peak Reroute, Silverhorn Reroute, Bristol Well Spur, Stampede Spur, South Grassy Reroute and Chief Mountain North Spur are unimproved, two-track roads that may currently be rarely used. Studies suggest that elk abandoned larger areas with superior forage when they were exposed to trail and road traffic, and shifted to overgrazed small forest patches where OHVs and trails were absent (Canfield et al., 1999). These changes in patterns may extend to mule deer as well (Canfield et al., 1999). The effect of increased OHV use on previously rarely-used roads could have a slight effect on game species through habitat displacement, although the proposed reroutes decrease the length of the Trail and amount of habitat affected compared to the No Action alternative.

The increased volume of traffic on affected roads in the Proposed Action may increase the probability of big game encounter by OHVs. For elk, the Bailey Spring Additional Route, Muleshoe Crossing and the Bristol Pass Spur intersect crucial winter elk habitat in Muleshoe Valley. The proposed Bristol Trailhead is on the edge of elk crucial winter habitat. For mule deer, Muleshoe Crossing and the Bailey Spring Additional Route intersect crucial winter habitat; Coyote Crossing, Deadman Crossing and the Bristol Access Route all intersect winter range. For pronghorn antelope, the proposed crossings all intersect year-round habitat in Muleshoe and Dry Lake Valleys. The proposed Patterson and Stampede Trailheads are within year-round pronghorn antelope range.

4.1.9.3 Wildlife Communities

Reptiles and Aquatic Communities

Both increased road traffic and off-road vehicle use kill reptiles and indirectly impact reptile and aquatic communities by creating migration and movement barriers, disturbing habitats and increasing sedimentation and chemical contamination (Maxwell and Hokit, 1999). Reroutes, crossings and additional routes under the Proposed Action could make Trail route use more predictable and managed, which would decrease the impact of the Trail on the local fauna communities compared to the No Action alternative.

Multiple water improvements would be executed under the Proposed Action that could help prevent negative impacts on aquatic communities. At Roadside Spring, the existing

route that crosses the Roadside Spring riparian area would be rerouted to avoid crossing the spring flow. The Meloy Spur would be eliminated from the designated Trail, which would prevent OHVs from impacting Meloy Spring. Culverts would be installed at Littlefield and Bailey Springs, and rock-bottom crossings would be installed at Rosebud and Milk Ranch Springs. These water developments could decrease the impact of OHVs on the aquatic communities in those water crossings. The rock-bottom crossings could also restore the traditional flow of water that has been altered by previous OHV use, which could potentially facilitate the restoration of original aquatic communities.

Birds and Small Mammals

Under the Proposed Action, the increased use of proposed routes, and the development of trailheads may have localized impacts on general bird and small mammal subpopulations and communities. Some bird species are sensitive to human activity, and may be reluctant to establish, or may abandon nest sites where human activity is frequent such as at trailheads (Hamann et al., 1999). Potential user-created and social trails may modify habitat by disturbing vegetation and soil and by changing microclimates, affecting small mammals such as the Great Basin pocket mouse and the pale kangaroo mouse (Hickman et al., 1999). User-created and social trails would be monitored and rehabilitated as soon as possible. Increased OHV traffic on proposed routes may also increase the risk for road-crossing collisions.

Local small mammal and bird subpopulations may be particularly affected by recreation activities such as camping and picnicking along the Trail or at trailheads. Such activities are often associated with food availability, and the garbage dumps and litter at campsites attract birds, rodents and insects, altering the natural feeding habits of these animals. Vegetation changes and the food availability characteristic of campgrounds may support larger numbers of birds and mammals, but decrease species diversity in the affected area (Hammitt and Cole, 1998). The proposed trailheads would each disturb up to ten acres of existing habitat and could result in localized habitat change around the sites.

Carnivores

The Proposed Action may have slight effects on carnivores of the project area. Many carnivores in the Trail area, including coyotes, skunks, raccoons and gray foxes, have broadly adapted to the presence of humans and human activities, including OHV use, and may be impacted only in localized areas of intense activity such as trailheads (Claar et al., 1999). Impacts of the Proposed Actions on more specialized species in the Trail area, such as bobcats, mountain lions, kit foxes and ringtails vary (Claar et al., 1999). The crossings and additional routes of the Proposed Action may affect mountain lions, which may decrease their use of roads, trails and trailheads that have excessive noise or persistent human disturbance, while increasing their use of less prominent, unimproved dirt roads (Claar et al., 1999).

4.1.10 Archaeological Resources and Historic Properties

Archaeological and historic resources along roads associated with the Proposed Action, with the exception of proposed eliminations from the designated Trail, would suffer

greater exposure to dust and exhaust from OHVs, and the risk of vandalism and theft would increase. These resources may also have a greater risk of being damaged by human-caused wildland fire. Resources along proposed eliminations would be less likely to be damaged by dust, exhaust, human-caused wildland fire, vandalism or theft under the Proposed Action than under the No Action alternative.

If Class III inventories reveal archaeological or historic sites or artifacts at locations of new ground-disturbing activity, the action would be altered to avoid cultural resources.

4.1.11 Minerals

Mining, oil, gas and gravel extraction operations would not be affected by the Proposed Action, with the possible exception of an increase of traffic on some roads used for operations and transport.

The Stampede Trailhead, located at the Pioche community gravel pits, would not affect gravel extraction because the MOU between the BLM, NDOT and the Town of Pioche would dictate management of multiple uses of the area in such a way as to decrease the potential for conflicts. The Ely Valley and Silverhorn Reroutes, which would move Trail users to roads that do not cross through private mine property, would reduce potential conflicts with property owners and mining operations. Safety signs placed along the road through the Pan American Mine property would encourage Trail users to stay on designated roads to reduce the potential for conflicts with the mine and to improve safety for Trail users.

4.1.12 Land Ownership and Rights of Way

The Proposed Action could affect existing corridors and rights of way, such as SWIP, LCWD and LCCRDA, or privately-owned or patented land by increasing traffic or users to these areas. However, all of the proposed routes adjacent to or intersecting these corridors and properties would be on roads maintained by Lincoln County, and all proposed trailheads and the Roadside Spring Reroute are on BLM land. Under the Proposed Action, Trail users on safety crossings and additional routes would be guided by signs, which could prevent undesirable, non-designated route use or dispersed camping. The Trail would be managed and monitored for impacts, and routes and trailheads could be temporarily closed or diverted if that need is identified.

4.1.13 Wilderness

As compared to the No Action alternative, the Patterson Trailhead could increase use in the area of the Mount Grafton Wilderness, but it would decrease the likelihood of campsite proliferation by providing camping facilities and amenities.

While Trail users are expected to frequent the area of the Big Rocks Wilderness for its unique features, the elimination of the Pahroc Summit Spur from the Trail and the construction of the Pahroc Wash Trailhead would discourage users from parking full-size

vehicles with trailers and camping near the wilderness area. By discouraging use in the area, the potential for motorized trespass into the wilderness would be decreased as compared to the No Action alternative. Monitoring of both the Trail and the wilderness area would improve the ability of managers to recognize where trespass has occurred and react quickly to rehabilitate the area.

4.1.14 Visual Resource Management

No long-term impacts to visual resources would result from the Proposed Action. Temporary impacts to visual resources in Class Two and Three viewsheds would be associated with large trucks and recreational vehicles parked at trailheads and with localized dust and the dusty haze that could result from high levels of use. Temporary impacts to visual resources may also occur as a result of slash pile burning associated with the construction of the Patterson Trailhead.

4.1.15 Recreation

4.1.15.1 OHV Recreation: Opportunities and Experience

The Proposed Action would provide improved OHV recreation opportunities and experience over the No Action Alternative. Safety crossings would provide loop opportunities and designated routes on which to reach points of interest and to return to trailheads. Additional routes would provide designated routes on which full-sized OHVs might travel without being scratched up by vegetation along narrow sections of trail. Spurs would designate connections between trailheads the Trail, while access routes would connect the Trail to major highways. Trail users would be provided with a host of attractive amenities at trailheads, where they would be able to park, unload ATVs, gather, camp and obtain information about the Trail and resources of interest in the project area. The Stampede Trailhead would provide an inviting experience for large groups, who could be guaranteed needed space for camping or staging events.

The South Grassy Reroute would provide a more enjoyable recreational experience than the existing route. Cattleguard installation, as well as proposed adjustments to the fences and cattleguard southeast of Roadside Spring, would make stopping to open and close gates unnecessary.

Several elements of the Proposed Action may detract somewhat from OHV recreational experiences. Some OHV enthusiasts may enjoy the experience of driving and splashing through water; the Roadside Spring Reroute and the installation of culverts and rock-bottom crossings would prevent Trail users from having this experience.

Some elements of the Proposed Action would not have an impact on OHV recreation. These include the elimination of the Meloy and McCullough Spurs, because the Meloy Spur is redundant and the McCullough Spur does not lead to any other parts of the Trail, interesting sites or amenities, and the installation of a second trough at North Mud Spring.

Temporary Trail closures could have short-term, location-specific, negative impacts to OHV recreation by prohibiting Trail use for the benefit of natural and/or cultural resources. However, Trail users would only be temporarily displaced from sections of Trail; under normal circumstances, much of the rest of the Trail would remain open. Additionally, Trail user safety would be improved as a result of many temporary trail closures, such as closures for fire.

4.1.15.2 Other Recreational Opportunities and Experience

Current recreational uses in the project area include hunting, trapping, antler collecting, OHV use, OHV races, heritage tourism, camping, hiking, bouldering and wildlife and wild horse viewing. Services provided along the Trail, such as trailheads, may receive use from hunters and trappers during game scouting and hunting seasons. Installation of cattleguards where there are currently gates would improve the driving experience for hunters and other drivers who use the roads on which the Trail is and would be designated. People wanting to hike in the Mount Grafton Wilderness may use the Patterson Trailhead as a staging and parking area. Also, rock climbers recreating in the Mecca area of the Big Rocks Wilderness may camp at the Pahroc Wash Trailhead in order to take advantage of the amenities that would be offered there.

4.1.15.3 Potential Conflicts

Conflicts may occur between Trail users and hunters during scouting and hunting seasons, particularly at trailheads where both groups may want to camp.

At the Big Rocks Wilderness, the potential for conflicts is expected to be high; in addition to wilderness enthusiasts and Trail users, rock climbers, grazing permittees and private property owners all use the area, and each group has different goals and values. The elimination of the Pahroc Summit Spur from the Trail would discourage some OHV use in the area, but the potential for conflicts with these other user groups would be decreased as compared to the No Action alternative.

Potential conflicts between Trail users and grazing permittees would be reduced by the replacement of gates along the Trail with cattleguards and the improvement of the cattleguard and convergence of fencelines southeast of Roadside Spring. Trail users would be less likely to disturb ranching activities under the Proposed Action than under the No Action Alternative. Potential conflicts between Trail users and private property owners would be reduced by the elimination of the Meloy Spur, which runs through private property, and the Silverhorn and Ely Valley Reroutes, which would move Trail users from roads that cross patented mine property to roads that do not. Potential for conflicts between Trail users and the Pan American Mine would be reduced by the placement of safety signs along the road intersecting the mine encouraging Trail users to remain on designated routes.

Conflicts may occur among Trail users if use increases to a point at which the Trail and trailheads become overcrowded.

4.1.15.4 Safety

The Proposed Action would provide for greater safety for Trail users than the No Action alternative. The designation of safety crossings, additional routes, spurs and access routes would provide Trail users with well-signed, obvious, known routes for reaching trailheads and towns for amenities and necessary services. These routes could reduce the potential for confusion and make it difficult for Trail users unfamiliar with the area to get lost.

The Burnt Peak Reroute would increase the safety of Trail users by allowing them to avoid several miles of a high-speed, high-traffic road. The Silverhorn Reroute would allow Trail users to avoid a dangerous open mine pit. Signs along the Pan American Mine property would encourage Trail users not to leave designated routes in an area with opens mines.

The safety of Trail users could be threatened during flood events (the potential for which is discussed in Sections 3.3 and 4.1.3). Potential flood frequency is occasional in the far-western section of Deadman Crossing and rare in portions of the Ely Valley Reroute and the Stampede Trailhead and Spur.

4.1.16 Wastes

Small amounts of human waste and trash may be dispersed along proposed routes as a result of the Proposed Action. However, the Proposed Action provides for trash cans and pit toilets to be installed at trailheads, which are locations where use would be most focused. Because of these amenities, Trail users would be less likely to disperse trash and waste around the Trail region than they would be under the No Action alternative, which provides no such amenities.

4.2 Consequences for the No Action Alternative

4.2.1 General Consequences

The designated Trail would still be managed and monitored under the No Action alternative, in accordance with LCCRDA and the Trail Management Plan. Sections of the Trail could be closed in order to avoid damaging sensitive natural and cultural resources, to protect Trail user safety and to repair damage to the Trail or resources.

As compared to OHV use in the area prior to designation of the Trail, increased awareness of OHV recreational opportunities in the area would increase OHV use on the roads designated as part of the Trail and other roads in the area. Because no safety crossings, additional routes, spurs, access routes or trailheads would be designated, Trail users would find their own roads and campsites to serve the purposes of these proposals.

This would create a dispersal of use in the region of the Trail, which would cause more widespread and less-predictable impacts to natural and cultural resources than would the focused use of the Proposed Action. Social and user-created trails could be expected to emerge around the area of this dispersed use, and these would not be monitored unless they occurred along the designated Trail. Dispersed versus focused use, as well as social and user created trails associated with dispersed use, would have a variety of impacts on multiple natural and cultural resources. These will be discussed in detail below.

4.2.2 Air Quality

Fugitive dust-prone soils are dispersed throughout the project area and are prevalent in Dry Lake Valley. It is possible that under the No Action alternative, Trail users seeking convenience would use undesignated roads and generate fugitive dust on these unmanaged routes.

4.2.3 Flood Potential, Surface Water Quality, Riparian Areas and Wetlands

Under the No Action alternative, the Meloy Spur would remain, and Trail users would continue travel near the Meloy Spring water flow and riparian vegetation, potentially affecting the riparian vegetation. The existing road at Roadside Spring would continue to cross the Roadside Spring riparian area, impacting water quality and riparian vegetation. No culverts or rock-bottom water crossings would be installed where water flows across the road; OHV use could decrease water quality and impact riparian vegetation near the Trail in areas such as Littlefield, Bailey, Milk Ranch and South Rosebud Springs.

4.2.4 Soils and Vegetation

Increased OHV use on roads associated with the No Action alternative could cause increased soil erosion, compaction, rutting and displacement, and contribute to disturbance of vegetation adjacent to, and surrounding these roads (Douglass et al., 1999). Under the No Action alternative, the lack of safety crossings could lead to a dispersal of use around the region of the Trail and an associated dispersal of unmonitored user-created and social trails. Without designated trailheads, camping could occur in dispersed, unmanaged locations. Such unmanaged uses could erode soil and disturb off-road vegetation. Unmanaged campsites have been documented to damage ground vegetation, erode surface litter and humus, compact soil and damage tree roots and trunks (Marion, 1998).

Trail sections with steep slopes (greater than 15 percent) and rut-prone soils in the No Action alternative include sections of the unimproved two-track routes that, under the Proposed Action, would be removed from the Trail. These include small sections of the Silverhorn route, South Grassy route and McCullough Spur.

4.2.5 Fire Management

Because OHV use in the region of the designated Trail would be more dispersed under the No Action alternative than under the Proposed Action, noxious weeds and invasive plants could spread over a wider area and therefore further alter fire regimes over a wider area. Also due to this dispersed use, the area of risk of human-caused wildland fire as a result of Trail use would be greater for the No Action alternative than for the Proposed Action.

4.2.6 Noxious Weeds and Invasive Species

Dispersed use, as well as social and user created trails associated with dispersed use may contribute to spread of noxious weeds and invasive species under the No Action alternative. The establishment and dispersal of noxious weeds and invasive species may directly affect forage for livestock, wildlife and wild horses. It may affect riparian systems by altering the surrounding vegetation. Weed establishment and dispersal indirectly affects wilderness character and recreational activities such as wildlife viewing and heritage tourism.

4.2.7 Range and Livestock

Livestock, range improvements and forage quality could be impacted by the unpredictable dispersed Trail use that may occur under the No Action alternative. Livestock access to water sources could be disrupted by Trail users loitering nearby. Trail users could fail to close the 11 gates that currently cross the Trail, leading to the escape of cattle, conflict with permittees, and potential damage to range improvements. Cattle using water developments at North Mud Spring could be impeded by nearby Trail use. The fence intersection in the Geyser allotment southeast of Roadside Spring would not be improved, potentially leading to conflicts between Trail users and permittees at that location.

4.2.8 Wild Horses

The No Action alternative does not provide for any improvements to North Mud Spring, so horses watering in this area would be disturbed by Trail use, particularly when Trail users stop at the pull-off by the existing trough.

Under the No Action alternative, no sections of the Trail would pass by Bailey Spring, so horses watering here would not be impacted.

Activities associated with wild horse gathers may not be impacted by the Trail, as provisions remain to close sections of the Trail when it is necessary to do so to protect resources and user safety.

4.2.9 Wildlife, Migratory Birds and Special Status Species, Including Plants

Under the No Action alternative, each of the wildlife species and communities could be affected by dispersed use and the potential proliferation of unmonitored user-created and social trails. Direct impacts include increased risk of collision, habitat modification through destruction and disturbance, decreased aquatic habitat quality and the increased presence of human activities such as vehicle use and wildlife harassment. Indirectly, these changes may affect wildlife through increases in noise, habitat modification and human activities (Spellerberg, 1998; Manley et al., 2004).

It is notable that separating effects of Trail use under the No Action alternative from pre-existing road and route use can be difficult if the effect is indirect or the response is not immediate (Boyle and Samson, 1985).

4.2.9.1 Sensitive Species

Ferruginous Hawk, Long-Eared Owl and Migratory Birds
Multiple studies suggest that avian species react to human activities such as OHV recreation with a continuum of responses, with habituation at one extreme and local site displacement at the other (Hamann et al., 1999). The dispersed, unpredictable OHV use possible under the No Action alternative may affect, but not negatively impact, the ferruginous hawk, long-eared owl and migratory birds by altering normal behavior along the Trail, the likely user-created and social trails, and the undesignated routes. The focused, predictable OHV use of the Proposed Action could affect these birds less than the unpredictable, dispersed Trail use of the No Action alternative.

Greater Sage-grouse
Under the No Action alternative, it is possible that unmonitored user-created and social trails could develop near sage-grouse leks. With a lack of designated campsites, Trail users may also camp near leks. Sage-grouse communities and leks are very sensitive to human intrusion (Hamann et al., 1999), and could be negatively impacted through this dispersed, unmanaged use.

Pygmy Rabbit
Pygmy rabbits occur throughout the Trail area and have been documented to occur adjacent to the designated Trail in several areas of high use, including the Bristol Well area. User-created and social trails could develop in this known pygmy rabbit habitat. As pygmy rabbits characteristically create burrows for nesting and protection in deep, loose soil, their habitat may be disturbed by OHVs driving off of designated roads and routes. Such OHV impacts may result in forage and cover removal, increase energy expenditure due to disturbance and contribute to mortality by vehicle collision or predation (Hickman et al., 1999).

Desert Bighorn Sheep
Studies suggest that bighorn sheep are susceptible to human disturbance and may change habitat use or behavior with human encounter (Canfield et al., 1999). Under the No

Action alternative, more dispersed OHV use is possible, potentially increasing the probability for encounter with bighorn sheep. In addition, occupied desert bighorn sheep habitat occurs adjacent to the Pahroc Summit Spur, which would not be removed from the Trail under the No Action alternative.

Flag Spring Snail
For the No Action alternative, OHV use near Meloy Spring on the Meloy Spur may increase the probability that the factors contributing to springhead integrity of flag spring snail habitat could be compromised.

Sensitive Plants
The long-calyx eggvetch has an historic range, and may be present, near Pioche along a road that, under the Proposed Action, would be replaced by the Ely Valley Reroute. It is also present near the McCullough Spur. Pioche blazingstar has a historic range, and may be present near Pioche along the road that, under the Proposed Action, would be replaced by the Ely Valley Reroute. Rock purpusia has a historic range, and may be present, along the Pahroc Summit Spur.

Potential OHV use off of designated roads and routes may disturb or destroy established plants, or may affect the surrounding hydrology and soil qualities. Increased OHV use near plant populations may increase invasive weed encroachment, which could affect the sensitive species communities.

4.2.9.2 Game Animals

Game animals including Rocky Mountain elk, mule deer, pronghorn antelope, desert bighorn sheep, and greater sage-grouse occur throughout the No Action alternative area, and they use much of the Trail region for year-round, summer and winter range. Bighorn sheep and greater sage-grouse have been discussed in the sensitive species section.

Under the No Action alternative, it is likely that Trail users would seek convenience and safety, and would thus use existing roads and routes in the Trail area that are not designated as part of the Trail. Game animal habitat and forage areas may be impacted from this use by OHVs through unpredictable encounters, impaired access to water sources and disturbed vegetation. Knight and Gutzwiller (1995) suggest that disturbance that occurs during feeding and at watering locations provokes notable stress or displacement, although the frequency of, and distance from, the OHV encounter may also influence the mammal response. With high variability between studies and responses, it is unclear if any of these impacts have acute or long-term effects on game mammals (Manley et al., 2004).

4.2.9.3 Wildlife Communities

Reptiles and Aquatic Communities
Dispersed, unpredictable and unmanaged road use under the No Action alternative could impact reptile and aquatic communities by creating migration and movement barriers,

disturbing habitats and increasing sedimentation and chemical contamination in streams (Maxwell and Hokit, 1999). Aquatic communities at Roadside and Meloy Springs may be affected by the road through the Roadside Spring riparian area and by the road near Meloy Spring. The open water crossings at Littlefield, Bailey, Milk Ranch and South Rosebud Springs would not be managed with culverts or rock-bottom crossings, and therefore these aquatic communities could be degraded by OHV use at the affected sites.

Birds and Small Mammals

Under the No Action alternative, Trail users may camp in dispersed and improvised campsites, and may disperse OHV use to undesignated roads and user-created and social trails. These actions may modify habitat by disturbing vegetation and soil and by changing microclimates, affecting small mammals such as the Great Basin pocket mouse and the pale kangaroo mouse (Hickman et al., 1999). Dispersed camping sites possible in the No Action alternative could increase habitat damage and waste availability, affecting local bird and mammal subpopulations.

Carnivores

The No Action alternative may have slight effects on carnivores of the project area. Dispersed, unpredictable Trail use may affect the behaviors of specialized species in the Trail area, such as bobcats, mountain lions, kit foxes and ringtails with noise and unpredictable human disturbance (Claar et al., 1999).

4.2.10 Archaeological Resources and Historic Properties

Because OHV use in the region of the designated Trail would be more dispersed under the No Action alternative than under the Proposed Action, more archaeological and historic resources may be susceptible to damage or theft from Trail users or human-caused wildland fire than would be under the Proposed Action. The dispersed camping that would result from a lack of designated trailheads may lead to Trail users camping on or near archaeological and historic sites. While this could directly damage sites, the presence of large recreational vehicles parked near these sites could temporarily degrade their historic character.

4.2.11 Minerals

The potential for conflicts between Trail users and mine property owners would be greater for the No Action Alternative than for the Proposed Action because no reroutes would be done to avoid the Ely Valley and Silverhorn Mine properties and signs would not be installed along the Pan American Mine property to encourage Trail users to remain on designated roads.

The potential for conflicts between Trail users, NDOT and the Town of Pioche would be reduced from that of the Proposed Action because the Stampede Trailhead would not be constructed.

4.2.12 Land Ownership and Rights of Way

Due to the lack of trailheads or convenience routes under the No Action alternative, Trail users may disperse use on undesignated routes and may camp in dispersed, unmanaged locations. This may affect existing corridors and rights of way such as the SWIP and LCWD rights of way and the LCCRDA corridor, or privately-owned or patented land by increasing unmanaged traffic or Trail users to dispersed areas. These uses may potentially affect corridors, rights of way and private land in unpredictable ways.

Under the No Action alternative, where no actions would be taken to focus use away from the area of the Big Rocks Wilderness, Trail users could develop informal trailheads, staging areas and practice areas on or near the private parcel there. This could cause impacts to private property and lead to conflicts between Trail users and the property owners.

4.2.13 Wilderness

Existing use in the Patterson Pass area, including use for the Trail, for hunting and hiking, would continue and could increase. Because the Patterson Trailhead would not be constructed under the No Action alternative, an increase in use in the area would lead to a proliferation of user-created campsites, which could draw motorized use closer to the Mount Grafton Wilderness and could eventually threaten wilderness character.

It is likely that motorized trespasses into the Big Rocks Wilderness would be greater with the No Action alternative than with the Proposed Action. The No Action alternative does not eliminate the Pahroc Summit Spur from the Trail, nor does it provide for a trailhead location that may discourage camping and focused Trail use in the immediate area of the Big Rocks Wilderness. Without incentives for Trail users to focus their recreational time at other parts of the Trail, they may be drawn to the area, which could result in negative impacts to wilderness character.

4.2.14 Visual Resource Management

No long-term impacts to visual resources would result from the No Action alternative. Temporary impacts to visual resources in Class Two and Three viewsheds would be associated with large trucks and recreational vehicles parked at user-selected staging and camping areas, as well as with localized dust and the dusty haze that could result from high levels of use.

4.2.15 Recreation

4.2.15.1 OHV Recreation: Opportunities and Experience

Because Trail users would not be encouraged to focus their use on designated safety crossings, reroutes, additional routes, spurs and access routes or at designated trailheads, they would have the opportunity for exploration to park, unload, camp and cross between

different sections of Trail. This experience would be fun for some Trail users, but it would be confusing and frustrating for others. The lack of designated trailheads in the No Action alternative would make many services and amenities unavailable to Trail users, which would degrade recreation experiences as compared to the Proposed Action. Additionally, OHV experiences would be interrupted by the closed gates along the Trail where the Proposed Action would call for the installation of cattleguards.

Temporary trail closures could have short-term, location-specific, negative impacts to OHV recreation by prohibiting Trail use for the benefit of natural and/or cultural resources. However, Trail users would only be temporarily displaced from sections of Trail; under normal circumstances, much of the rest of the Trail would remain open. Additionally, Trail user safety would be improved as a result of many temporary trail closures, such as closures for fire.

4.2.15.2 Other Recreational Opportunities and Experience

Current recreational uses in the project area include hunting, trapping, antler collecting, OHV use, OHV races, heritage tourism, camping, hiking, bouldering and wildlife and wild horse viewing. By not providing trailheads for the Trail, the No Action alternative would increase pressure on existing campsites in the region of the Trail during hunting season when these sites are most heavily used so that some users of these sites may be displaced.

4.2.15.3 Potential Conflicts

There would be greater potential for conflicts between Trail users and other groups using land in the project area under the No Action alternative than under the Proposed Action. By not providing trailheads for the Trail, the No Action alternative may cause conflicts, particularly during hunting season, between hunters who have traditionally used existing campsites around the Trail and Trail users who would increasingly use these sites as the Trail becomes more popular. When these campsites are all in use, Trail users or hunters may create new campsites, which would negatively impact the recreation experience of riding along the Trail because Trail users may eventually see more campsites than naturally-dispersed vegetation.

By not eliminating the Pahroc Summit Spur, the No Action alternative would fail to discourage focused use in the area of the Big Rocks Wilderness. Under the Proposed Action, OHV activity in this area would primarily be Trail use, but under the No Action alternative, OHV activity would likely also involve camping and the development of informal practice areas. Such use could cause conflicts between OHV users and rock climbers, wilderness enthusiasts, heritage tourists, grazing permittees and private property owners.

By not eliminating the Meloy Spur, installing safety signs along the Pan American Mine property or designating the Silverhorn and Ely Valley Reroutes potential for conflicts with private property owners would be increased. By not replacing gates with

cattleguards or making improvements to the cattleguard and convergence of fencelines southeast of Roadside Spring, potential for conflicts with permittees would be increased.

4.2.15.4 Safety

The dispersed OHV use that could result from the No Action alternative could decrease Trail user safety because other drivers would not know where to expect to see Trail users. Trail users unfamiliar with the area could devote more attention to not getting lost than to safety, traffic and other obstacles. Trail users could also become lost more easily under the No Action alternative than under the Proposed Action.

Because no safety signs would be installed along the Pan American Mine property and no reroute would be done to move Trail users away from the Silverhorn Mine and its dangerous open pit, Trail user safety would be more greatly compromised for the No Action alternative than for the Proposed Action. Trail users may decide to explore the mine area and could easily get hurt in so doing.

4.2.16 Wastes

Because the No Action alternative does not provide Trail users with amenities such as trash cans and pit toilets, Trail users would be more likely to disperse human waste and trash around the Trail region under the No Action alternative than under the Proposed Action. Without such amenities, human waste and trash could impact other resources, such as soil, water, wildlife and vegetation, as well as visitor experience.

4.3 Cumulative Impacts Analysis

Cumulative impacts are impacts on the environment which result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. For this action, the Cumulative Effect Study Area (CESA) is the area bounded by State Road 318 on the west, U.S Highway 93 on the south and east, and the Lincoln/WhitePine Counties County line on the north.

4.3.1 Past Actions

In 2004, LCCRDA designated the existing Silver State OHV Trail and mandated that a management plan be written and monitoring be done to protect sensitive natural and cultural resources. The roads associated with the Trail have historically been used for casual OHV recreation, community transportation and livestock operations. Several OHV races have been held in the area, and hunting has traditionally brought many people to the area and contributed to use of roads and user-created primitive campsites in the region of the Trail. LCCRDA also created 14 new wilderness areas in Lincoln County. In December 2006, the White Pine County Conservation, Recreation and Development Act (WPCCRDA) required that the BLM conduct a study of routes that could extend the

Silver State Trail into White Pine County without causing significant negative impacts. Weed inventories and treatments have been conducted in this area by the Tri-County Weeds Program. Wildland fires have occurred throughout the region of the Trail.

4.3.2 Present Actions

Management and monitoring plans for the Trail are presently being developed and will be completed by November 2007, in accordance with the requirements of LCCRDA. Wilderness management plans are being developed for the 14 new wilderness areas in Lincoln County. Funding is being sought to pursue a study of routes in White Pine County that may extend the Trail northward from Lincoln County. The BLM Ely District is in the process of both conducting a district-wide watershed analysis and developing a new Resource Management Plan. Recreational OHV use in the area is increasing. Elk populations are growing, which is leading to an increase in hunting tags and therefore more people hunting in the area. Weed inventories and treatments by the Tri-County Weeds Program are ongoing.

4.3.3 Reasonably Foreseeable Future Actions

On the Silver State Trail – Lincoln Section, anticipated increases in levels of use may necessitate picnic areas at natural stopping points, such as Roadside Spring; site-specific NEPA analysis would be required for such installation. Increased use may also necessitate the development of more trailheads, and their associated spurs would have to be added to the Trail; these actions would also require site-specific NEPA analysis. The most likely trailhead addition would be in the Gap Mountain area, where people recreating at Kirch Wildlife Management Area may want more convenient access to the Trail than the Proposed Action would offer them. Additionally, the Chief Mountain OHV Recreation Area could be developed, pending NEPA analysis, and would connect with the Trail in numerous locations. It can be anticipated that organizations will request special recreation permits to host races and events on the Trail; each event would require NEPA analysis. Further, the Silver State OHV Trail – White Pine Section may extend the Trail northward to Ely and other Nevada counties.

The new Resource Management Plan for the Ely District is expected to designate one Area of Critical Environmental Concern (ACEC) in the region of the Trail, which would be adjacent to and southwest of the Big Rocks Wilderness. A staging area for the Mecca bouldering area in the Big Rocks Wilderness will be constructed very near the Trail. Use of Mecca is expected to increase as the population of Southern Nevada grows. The BLM or local organizations may obtain funding to restore some of the historic structures along the Trail, particularly the Bristol Well historic site. The BLM may also designate a new Elk Viewing Area in Lincoln County, close to the Trail. Potential land disposals in the Pioche area may occur along the Trail. Other projects that may occur in the area of the Trail include an underground pipeline for Southern Nevada Water Authority, carrying water southward from White Pine County and the installation of 500 kilovolt power lines running north to south in the designated SWIP right of way.

4.3.4 Cumulative Impacts

According to page 36 of the 1994 BLM *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values where the incremental impact of the proposed action results in a meaningful change in the cumulative effect from other past, present, and reasonably foreseeable future actions within the CESA. Accordingly, the issues that are analyzed are noxious weeds, wildlife, cultural resources and recreation.

The Management and Monitoring Plans being developed for the Trail should allow for the following impacts associated with Trail use to be systematically monitored so that adaptive management strategies may be developed and mitigation actions may be taken. The completion of the watershed analysis of the BLM Ely District could provide useful information for the Trail Monitoring Program.

4.3.4.1 Noxious Weeds and Invasive Species

Increased OHV use in the region of the Trail, both on existing roads and on illegal user-created trails, could contribute to the spread of noxious weeds and invasive plant species, thereby changing vegetative community characteristics and further altering the fire regimes in this area. Damage to soils and vegetation as a result of OHV use could also contribute to the spread of weeds, as well as indirectly impacting livestock, wild horses and wildlife that depend upon the soils and vegetation for habitat and forage. Further impacts related to weeds could be caused by the SNWA pipeline and the powerlines anticipated to intersect the Trail region. Fires in the region may continue to create opportunities for noxious and invasive weeds to spread.

4.3.4.2 Wildlife

Increased OHV use, even on existing roads, of the entire Silver State Trail system, as well as the installation of the pipeline and powerlines, may increase habitat fragmentation in the project area, affecting game species distribution, and small animal and plant subpopulations (Trombulak and Frissell, 2000). Impacts to wildlife and wild horses could also impact wildlife and wild horse viewing, as well as hunting and trapping.

4.3.4.3 Archaeological Resources and Historic Properties

The increase in recreational opportunities and recreational use, as well as the increasing ease of access to the area, could expose more archaeological resources and historic properties to risk of damage and theft. More focused use at popular cultural sites could impact the prehistoric or historic character of these sites and therefore also impact visitor experience. Additionally, ground disturbances associated with the powerlines and pipeline could cause damage to archaeological and historic resources.

4.3.4.4 Recreation

In the area of the Big Rocks Wilderness, the wilderness designation, Trail designation, the Mecca bouldering area and anticipated ACEC designation could make the area more attractive for visitors, thereby increasing use of and impacts to the area. The other wilderness areas near the Trail, the possible Elk Viewing Area and the possible restoration of historic structures near the Trail could also attract more visitation, thereby increasing use and impacts to the entire region of the Trail. Increasing use of the area for hunting could also create impacts to the Trail region. Additionally, conflicts could arise between OHV users and other recreation user groups, particularly hunters.

The installation of power lines and a pipeline through Dry Lake Valley and the associated traffic, equipment and resource disturbances required to build and maintain them could impact the experiences of Trail users, obstructing their views of vast, open valleys, degrading their opportunities to enjoy the remoteness of the area and possibly necessitating the temporary closure of some sections of Trail.

OHV recreation opportunities could be improved by the development of the Chief Mountain OHV Recreation Area and the extension of the Trail into White Pine County. This may also contribute to economic growth in both Lincoln and White Pine Counties by using a scenic OHV trail to connect towns and cities that Trail users can visit. The disposal of land along the Trail in the Pioche area may cause some conflicts between new landowners and Trail users.

Should use indicate its necessity, the addition of a trailhead in the Gap Mountain area could improve other, non-OHV recreation opportunities for Trail users, such as fishing. Also, should use indicate their necessity, developed picnic areas at natural stopping points along the Trail could provide an enjoyable experience for Trail users, and opportunities to relax in the shade and take advantage of amenities like picnic tables without having to first return to a trailhead. Races and events that may be held on the Trail could improve opportunities for OHV recreation, but may cause damage to the Trail itself and impact natural and cultural resources along the Trail. These impacts would be assessed in the NEPA analysis required for each special recreation permit.

5. Consultation and Coordination

The following persons participated directly in the preparation of this document, through the interdisciplinary team process (all are BLM employees unless otherwise noted):

- Karie Wiltshire, Great Basin Institute – Co-author
- Jamie Fields, Great Basin Institute – Co-author
- Cory Lytle, Great Basin Institute – Project Manager
- Jack Tribble – Project Lead
- Gary Medlyn – Air, Water, Soils, Floodplains and Riparian Areas
- Bonnie Waggoner – Noxious Weeds and Invasive Species
- Shirley Johnson – Range and Livestock
- – Archaeological, Historic and Paleontological Resources
- Ben Noyes – Wild Horses
- – Wildlife, Migratory Birds and Special Status Animals and Plants
- – Wilderness, VRM, ACECs, Special Designations and Recreation
- Bill Wilson – Minerals
- Doris Metcalf – Lands
- Elvis Wall – Native American Religious Concerns
- Kyle Teel – Fire Management
- Sheri Wysong – Environmental Coordination and Land Use Planning

Other specialists who were consulted on this project include:

- Sue Howle – BLM Environmental Coordination and Land Use Planning
- Heather McKenny – BLM Wildlife Biologist
- Alicia Styles – BLM Wildlife Biologist
- Paul Podborny – BLM Wildlife Biologist
- Kari Harrison – BLM Soil Scientist
- Steve Leslie – BLM Wilderness Planner
- David Jeppesen – BLM Outdoor Recreation Planner
- Mark Henderson – BLM Archaeologist
- Tim Smith – BLM Archaeologist
- Nathan Thomas – BLM Archaeologist
- Dr. Donald Sada – Desert Research Institute
- Dr. Patricia Manley – USDA Forest Service Pacific Southwest Research Station, Research Wildlife Biologist
- John Mosley – NRCS Soil Scientist

As part of the Proposed Action, a Memorandum of Understanding would be developed between the BLM, the Nevada Department of Transportation and the Town of Pioche relating to the construction and management of the proposed Stampede Trailhead. An agreement would also be made with the Pan American Mine to post safety signs along the Trail that intersects patented mine property.

The Proposed Action was discussed during a Tribal Coordination Meeting on October 17, 2006, and no comments were received from any tribal governments as a result of that discussion. Tribal representatives were also invited to attend the interdisciplinary team field trip on January 10, 2007, and none attended.

6. Glossary and Abbreviations

ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level (associated with wild horse management)
ATV	All-Terrain Vehicle
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EA	Environmental Assessment
EPA	Environmental Protection Agency
FMU	Fire Management Unit
HMA	Herd Management Area
LCCRDA	Lincoln County Conservation, Recreation and Development Act
LCWD	Lincoln County Water District
MOU	Memorandum of Understanding
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969
NNHP	Nevada Natural Heritage Program
NRCS	Natural Resources Conservation Service
OHV	Off-Highway Vehicle
PM	Particulate matter
RIP	Range Improvement Program
SW ReGAP	Southwest Regional GAP project
SWIP	Southwest Intertie Project
"Trail"	Silver State Off-Highway Vehicle Trail – Lincoln Section
TRT	Technical Review Team
USDA	United States Department of Agriculture
VRM	Visual Resource Management
WPCCRDA	White Pine County Conservation, Recreation and Development Act

Bouldering
"The practice of climbing on small rock formations or boulders that are short enough in height that ropes and gear are not necessary" (Access Fund 2006, p. 3).

Fugitive dust
Fine soil particles suspended in the air by wind action and human activities that do not originate from a specific point (Ferguson, Downs and Pfost, 1999).

Hydric
"Characterized by, relating to, or requiring an abundance of moisture" (Merriam-Webster, 2007).

Invasive
Describes a species which takes over a new habitat where it was not previously found, often to the detriment of species which were there before.

Lek
Breeding or strutting grounds for greater sage-grouse.

Noxious weed
Any plant designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property.

Particulate matter
Tiny solid particles and liquid droplets suspended in the air.

Perennial
Active throughout the year, or living for many years, such as a perennial plant.

Riparian
Ecosystems that occur along watercourses or water bodies. They are distinctly different from the surrounding lands because of unique soil and vegetation characteristics that are strongly influenced by free or unbound water in the soil. Riparian ecosystems occupy the transitional area between the terrestrial and aquatic ecosystems. Typical examples would include floodplains, streambanks and lake shores (USDA-NRCS, 2005).

Social trail
Foot-worn hiking path.

Subpopulation
An identifiable fraction or subdivision of a population (Merriam-Webster, 2007).

User-created trail
Illegal route created by OHVs leaving a designated road, trail or parking area.

Threatened species
Any plant or animal species defined under the Endangered Species Act as likely to become endangered within the foreseeable future throughout all or a significant portion of its range; listings are published in the Federal Register.

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8. Appendices

Appendix A

SILVER STATE OHV TRAIL

MONITORING PLAN

Draft Monitoring Protocol
Prepared for the Bureau of Land Management
By Research Associate Liz Salsbury

Background

The Lincoln County Conservation, Recreation and Development Act of 2004 (LCCRDA) was signed into law on November 30, 2004 designating 260 miles of trail called the Silver State Off-Highway Vehicle (OHV) Trail. Most sections of this trail already exist and therefore have prior use. However, with the rise in popularity of OHV use, and the future growth of the southern Lincoln County area expected to be tremendous, we anticipate that use on this trail is going to increase over the next ten years. Monitoring is providing an inventory that is evaluating the current condition of a resource in relation to management objectives so the issues can be identified. Any type of use has an effect on the natural environment; this monitoring protocol is designed to be pro-active in abating these effects. The following information is the recommended monitoring protocol for the Silver State OHV Trail.

Monitoring Protocol

Monitoring in subsequent years must be conducted during the same time period to ensure that climatic conditions are as similar as possible to allow comparisons over multiple years. It is recommended that the technician monitor intensely once per year to effectively evaluate the overall state of the trail. Identified problem areas or high impact areas will be monitored more frequently and proactively to address impacts and coincide with Adaptive Management Strategies. The monitoring protocol will involve a combination of fixed point sampling, photo point problem assessment, and visual monitoring for noxious/invasive weeds and cultural sites. Monitoring for this Trail is for proper management functions and shall not serve as scientific research.

Fixed Point Sampling

This sampling technique relies on a sampling approach to characterize trail conditions from measurements taken at transects located at one-mile increments along randomly selected trail segments. During future assessments it is not necessary to relocate the same sample points for repeat measures since the data will be summarized through statistical analyses to characterize resource conditions for each trail segment and for the entire trail system. Travel will be conducted on an ATV and distances will be measured by the odometer.

The technician will start at a random point at a random trailhead and begin travel via OHV until they reach the first point. At this point, the researcher will measure the following:

- Maximum Tread Incision (MTI)
- Tread Width (TW)
- Tread Condition (TC)
- Trail Grade/Slope
- Presence of:
    - Bootleg (Secondary) Trails
    - Muddy Soil / Standing Water / Running Water
    - Excessive Soil Erosion
    - Excessive Silty Soils,(Poof Dust)

To measure MTI the technician will put a metal stake on each side of the trail and tie a string to each stake, with the string drawn tight the technician will then take the yard stick and measure the depth, or incision, along three points of the string. All three samples will be logged on the data sheet and later averaged for the overall average MTI. TW will be taken by measuring the distance of the width of the trail. Leave the stakes in that were used to measure MTI, and determine the width of the trail from stake to stake with the tape measurer. TC will be determined by assessing the overall condition of the trail. To do this, the technician will do a visual survey giving a percentage to predefined trail characteristics. Trail Grade, or Slope will be taken at each point and will be measured with a clinometer. The technician will also note if there is muddy soil, standing water, running water, soil erosion, excessive poof dust, or the presence of bootleg trails at each sampling point. All data taken at each point will be written on the Point Sampling Data Sheet. Please see Appendix A.1 for reference.

Problem Assessment

The problem assessment is used to determine the frequency of occurrences of predefined "problem areas." There are two steps to this: The first is documenting preexisting areas of concern with a camera and the second is looking for new areas of concern while out monitoring.

Photo Point

The areas of concern will be documented using the photo point monitoring protocol where the technician locates problem areas and marks it as a photo point. Each time the technician is out monitoring he/she will stop and take a photo to document the changes over time. Areas of concern that may warrant a photo point

- Tread incision > 24 inches
- Silty Soils (poof dust) > 12 inches deep and 3 yards in length
- Any presence of running water
- Standing water > 3 yards
- Any nonfunctional "waterbar"
- Any vandalism (torn or knocked down signs, etc.)

When the technician finds an area impacted by one of the above problems, standard photo point assessment protocol will be completed and the area will be GPS'd. All of this will be documented on the photo point data sheet (Appendix A.2).

After the monitoring is finished the technician will have a list of the photo points and pictures of the disturbed areas. The list of repairs should be completed before the next monitoring session. The area will continue to be a photo point for at least 2 years to ensure that the repairs have been sustained.

Problem Assessment

The second part is visual monitoring of new problem areas and an overall inventory of areas of concern along the trail. While riding along the trail the technician will look for the following problems

- Number of wet/muddy areas on the trail one yard in length or greater.
- Any running water on the trail.
- Number of sections of soil erosion greater than three yards long and 20 inches deep.
- Number of "bootleg" or secondary trails, including multiple or parallel treads.
- Number of poof dust areas one yard in length or greater.

By making a visual judgment that any trail feature meets the above criteria the technician will measure the trail feature and record on the problem assessment data sheet (Appendix A.3) and make a GPS point. In subsequent monitoring sessions the researcher will return to these same sites to monitor for increased damage. If the damage increases to the extent that a photo point needs to be created than the technician will do so and the area will be put on the maintenance list.

Wildlife

Motorized types of activities, such as OHV use, could have negative impacts on wildlife. Any newly created of unauthorized routes along the Trail will be rehabilitated immediately to reduce impacts to wildlife.

Annual recommendations from the Nevada Department of Wildlife will be incorporated in monitoring and adaptive management. Specific areas along the Trail that have been identified through consultation will be monitored more frequently to minimize possible impacts and conflicts with wildlife as well.

Measuring the effects of OHV recreation on wildlife has received limited systematic attention, resulting in a knowledge base that is contrasting and lacking in sound data. This is because trails are stationary and wildlife have a wide variety of movement patterns. The impacts of OHV use to all wildlife are not immediately obvious or easily measured. Instead of directing complete attention toward a wildlife monitoring program that may, or may not produce sound valid data it is recommended that considerable emphasis be placed on educating the public about how to reduce the negative impacts on wildlife due to OHV use.

Because it is expected that increased use will occur on the Trail and that it may have an impact on wildlife, we will monitor for what is reasonable, economical, and will produce data that is repeatable and can be correlated to OHV use.

New disturbance or construction occurring during the period of May 1st to July 15th will be subject to the provisions of the Ely District Policy for Management Actions for the conservation of migratory birds. A qualified wildlife biologist will survey the area for nesting migratory birds. If any are found, operations will be postponed until after July 15.

Vegetation

Baseline data will be collected in year one on the presence or absence of sensitive plant species within 50 feet of the Trail. Information will be gathered from the Nevada Natural Heritage Program as to the known location of plants within the buffer and modeling will be done based on their radius of locational uncertainty. Any habitat that meets the requirements of the sensitive plants will be monitored for presence or absence in year 1, year 5, year 10, year 15, and so on. In year 2, quadrant surveys will be done to calculate population size and surveys will continue every third year to monitor any changes in population. See Appendix A.6. The Nevada Natural Heritage Sensitive Species form will be completed and sent to the appropriate heritage botanist upon discovery of sensitive plant populations.

Water

Several water crossings occur throughout the Trail area and the water sources are used by livestock and wildlife. Each crossing will be improved with a culvert, hard rock bottom crossing, or rerouted to minimize negative water quality impacts. Culverts will be monitored during construction to minimize the amount of sediment entering the stream. Because of prior utilization of wildlife and livestock, both stream bank erosion and fecal colliform are present. It is recommended that no water quality monitoring be done outside of construction monitoring.

Weeds

All wheeled vehicles have the potential to carry seeds on their tires and distribute plants. This can have a negative effect on the environment if the seeds being carried are invasive or noxious weeds. In this case we are only going to monitor for the presence of noxious weeds as they are generally the species that may be able to be controlled if eradicated properly. It is recommended by the BLM weed specialist to have a visual monitoring program for the presence of noxious weeds. In addition to the visual monitoring twice a year, it is recommended that the technician go to each trailhead and look for noxious weeds and walk (or ride) ½ mile down the trail from the trailhead to look for them as well. This should be done once a month during the growing season. All data should be recorded on the Silver State Trail Noxious Weed Data Sheet (Appendix A.4). The technician needs to make sure they have the Nevada Pesticide Applicators training before chemically eradicating any weeds.

Cultural Sites

Due to the large number of cultural sites scattered in areas of close proximity to the trail, only pre-selected public sites will be monitored. A lottery will be drawn of 30 additional sites of smaller scale to be monitored each year. Before each spring monitoring session the researcher shall check with the Archeology specialist to ensure there are no new sites that need to be added to the list. The researcher will visit the site and the data will be entered on the Archaeological and Cultural Site Data Collection Sheet, Appendix A.5. BLM archeologists will be notified immediately of any site deterioration identified through the site monitoring program.

Range

Range improvements such as troughs, fences, water tanks, and cattleguards not only help manage livestock, but wildlife as well. A major concern with increased use on the Trail adjacent to range improvements is vandalism or user group conflicts. Baseline data will be gathered in year one to document each range improvement site through the standard BLM photo point process. Visual monitoring will occur in subsequent years by both the monitoring technician and range permittees to determine Trail related maintenance needs.

Silver State OHV Trail

POINT SAMPLING DATA SHEET

Researcher: Date:

Starting point: UTM Ending point: UTM

Tread Condition (percent of each totaling 100%)

Pt. #	GPS #	MTI (in)	TW (in)	Slope %	Bootlegs Y/N	BG	L	V	R	MS	SW	ER	G	W	RW	PD	Other

BG- Bare ground MS- Muddy Soil W- Wood R-Rock

L- Litter SW- Standing Water RW- Running Water G-Gravel

V- Vegetated ER- Exposed Roots SS-Silty Soils (Poof Dust)

Appendix A.2

Silver State OHV Trail

PHOTO POINT MONITORING DATA COLLECTION SHEET

Technician:_____ Date:_____ Trail Segment:_____
GPS point:_____ UTM:_____ # of photo points:_____
Compass Bearing:_____
Distance:_____
Slope:_____
Description and problem:_____
_____
_____
_____ place photo here
_____
_____
_____
_____
_____
_____
_____

Additional comments:

Technician:_____ Date:_____ Trail Segment:_____
GPS point:_____ UTM:_____ # of photo points:_____
Compass Bearing:_____
Distance:_____
Slope:_____
Description and problem:_____
_____
_____
_____ place photo here
_____
_____
_____
_____
_____
_____
_____

Additional comments:

Appendix A.3

Silver State OHV Trail

PROBLEM ASSESSMENT DATA SHEET

Monitoring Technician: Date:

Between Point #'s	GPS point	standing water (3 ft long or >)	Soil Erosion (12 ft long x 20 in or >)	Bootleg Trails	Water Bars functional Y/N/UNKL	Silty Soils (12 feet long x 20 in deep or >)	Other

Appendix A.4

Silver State OHV Trail

NOXIOUS WEEDS DATA COLLECTION SHEET

Species:_____
Technician:_____ Date:_____ Trail Segment:_____
Time:_____GPS #:_____ Pulled: Y N How many?_____
Buffer (in):_____

Cover %	None	Comments:_____
	Trace (0-1.0%)	_____
	Low (1.1-5.0%)	_____
	Moderate (5.1-25.0%)	_____
	High (25.1-100%)	_____
Distance to water:	In water	_____
	Seasonal flow	_____
	0-15 feet	_____
	> 15 feet	_____
	No water present	_____
		_____

Location:_____
_____ photo taken: Y N photo number:_____

Species:_____
Technician:_____ Date:_____ Trail Segment:_____
Time:_____GPS #:_____ Pulled: Y N How many?_____
Buffer (in):_____

Cover %	None	Comments:_____
	Trace (0-1.0%)	_____
	Low (1.1-5.0%)	_____
	Moderate (5.1-25.0%)	_____
	High (25.1-100%)	_____
Distance to water:	In water	_____
	Seasonal flow	_____
	0-15 feet	_____
	>15 feet	_____
	No water present	_____
		_____

Location:_____
_____ photo taken: Y N photo number:_____

Appendix A.5

Silver State OHV Trail

HERITAGE SITE DATA SHEET

Researcher Information

Researcher:

Date of Visit:

Time Spent at Site:

Site Name/#:

GPS: E N

Site Information

Site Condition: changed unchanged

Were people observed at the site: Y N

Number of people:

Were they damaging site? Y N

Vehicle Description:

Check all site Impacts that apply and describe changes to the site
Describe, Measure, and Count elements of Impact

Animal Damage (1 Burrow, 2 cow trails, etc)
_____
_____

Structure(1. Decay 2. Dismantling 3. Alteration)
_____
_____

Camping(1 Fire Pit)
_____
_____

Vandalism/Trash(1. Excavation 2. Looting 3. Display Piles)_____
_____

Erosion/Deposition(1. water cut banks, 2. Water deposition, 3. water Displacement, 4. Wind Deflation)_____
_____

Vehicle Damage(1. Tire Tracks, 2. Bladed, 3. Road Building i.e ditches, shoulder blading, new road)
_____
_____

Fire Damage
_____
_____

Wood Cutting
_____
_____

Prospecting (1. Push Pit, 2. Soil Trenches 3. Drill Pad) _____
_____

Other Impacts (Describe)
_____
_____

Appendix B

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

Silver State Off-Highway Vehicle Trail
North and North-central Lincoln County, Nevada
May 16th, 2007

The Silver State Off-Highway Vehicle Trail was designated on November 30, 2004 by Title IV of the Lincoln County Conservation, Recreation and Development Act, or Public Law 108-424 (LCCRDA). The Trail covers approximately 260 miles of established roads and maintained or established two-tracks from Patterson Pass on the north end of the Trail to just north of Highway 93, west of Caliente on the south end of the Trail.

The Trail is on land typical of the central Basin and Range eco-region with northerly trending fault-block ranges and intervening drier basins. Elevations within the project area range from approximately 4,600 feet to 7,600 feet, with soils grading upslope from dry and sandy or rocky to productive with organic matter. Valleys, lower slopes and alluvial fans are either shrub- and grass-covered or shrub-covered. Higher elevation slopes support woodland, mountain brush and scattered forests.

The annual precipitation ranges from approximately seven inches on some of the valley bottoms to 20 inches on the mountain peaks. Temperatures range from greater than 90 degrees Fahrenheit in the summer months to negative 20 degrees in the winter. The area is used by domestic livestock under strict terms and conditions outlined in grazing permits, as well as by numerous wildlife species.

Current use of the Trail is casual; most users are not on the Trail specifically for recreational use, but to use the roads for other activities such as transportation and hunting. Large increases in the population of Southern Nevada, the demand for recreational opportunities on public lands, the popularity of off-highway vehicle (OHV) recreation and OHV use limitations in Southern Nevada, as well as the success of other OHV trails around the country suggest that recreational use of the Silver State Trail will continuously increase.

Management of the Trail would concentrate OHV use along one trail system, thereby discouraging dispersed OHV recreational use on existing roads and the proliferation of unauthorized roads and trails. The Proposed Action would provide a number of mitigating measures designed to further protect natural and cultural resources along the Trail.

Noxious weeds documented within a 0.25 miles of the proposed routes and trailheads of the project area include spotted knapweed (*Centaurea stoebe*), dalmation toadflax (*Linaria dalmatica*), salt cedar (*Tamarix* spp.), and Scotch thistle (*Onorpodum acanthium*). The invasive weed bull thistle (*Cirsium vulgare*) has been documented at several sites along project area. Other noxious and invasive weeds of concern known to occur in the general project area include hoary cress (*Lepidium draba*), tall whitetop (*Lepidium latifolium*), Russian knapweed (*Acroptilon repens*) and Russian olive (*Elaeagnus angustifolia*). There is likely also cheatgrass (*Bromus tectorum*), red brome (*Bromus rubens*), halogeten (*Halogeten glomerus*) and Russian thistle (*Salsola kali*) scattered throughout the area.

Unimproved, two-track routes are common throughout the project area, and several are proposed for use under the Proposed Action. Noxious weed populations have been documented on and near these proposed routes. Noxious weeds and invasive species are prevalent in and near the city of Pioche. Under the Proposed Action, the Trail would approach Pioche, and a trailhead wiould be established near Pioche.

Noxious weeds and invasive species are documented to occur near two intermittent stream crossings and one riparian area that intersect the designated routes and Proposed Actions for the Trail. Spotted knapweed occurs near an intermittent stream on the northern Patterson Pass, salt cedar occurs near an intermittent stream crossing in the far western junction of Deadman Crossing and bull thistle occurs near the Roadside Spring riparian area.

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

None (0)	Noxious/invasive weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious/invasive weed species in the project area.
Low (1-3)	Noxious/invasive weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious/invasive weeds into the project area.
Moderate (4-7)	Noxious/invasive weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious/invasive weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious/invasive weeds within the project area.
High (8-10)	Heavy infestations of noxious/invasive weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious/invasive weeds on disturbed sites throughout much of the project area.

This project rates as Moderate (6) at the present time. It is assumed that user-created OHV trails would develop along the Trail, particularly in areas where use would be most concentrated, such as natural stopping points like traditional-use campsites, springs and obvious archaeological and historic sites like Bristol Well. Similarly, social (hiking) trails can be expected to develop along the Trail, particularly in the aforementioned concentrated-use areas.

All of these projected Trail use increases are associated with three factors that increase the probability that more areas may become infested with noxious weed species even when preventative management actions are followed:

1. There would be disturbance of soil and native plants adjacent to the Trail, around trailheads, and at several construction areas. Noxious and invasive weeds are likely to establish under such disturbance conditions.
2. Noxious and invasive weeds would be more easily spread by increased OHV use on the Trail if riders do not keep their OHVs properly cleaned of dirt and debris.
3. There is a potential for new user-created OHV trails and social (hiking) trails which would increase the area affected by Trail users. These new routes and trails would increase the area potentially infested by noxious weeds and invasive species.

Factor 2 assesses the consequences of noxious/invasive weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious/invasive weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

For this project, the factor rates as Moderate (6) at the present time. While an increase in fine, flashy fuels such as cheatgrass and red brome could increase the fire regimes in the area, most of the fire management units (FMUs) in the project area already have fire regimes that have been significantly altered from their historic range. Fires in these areas have increased in frequency and intensity from what historical vegetation and fire cycles would allow, affecting the native plant communities.

Due to the increased fire regimes, many of the plant communities in the project area are infested with cheatgrass, red brome or halogeton in the understory, or are adjacent to communities with these species. These species have decreased the diversity of many native vegetation communities in the project area.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious/invasive weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious/invasive weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious/invasive weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.

For the Silver State OHV Trail project, the Risk Rating is Moderate (36) at the present time. Under the Proposed Action, the construction at the trailheads and at the Roadside Spring Reroute would only use construction equipment cleaned with a pressure washer prior to entering the work area, be monitored and treated for weed establishment, and seeding would occur as needed to restore destroyed plant communities as indicated through monitoring in the construction areas. Any hay, straw or other organic materials used for reclamation or stabilization activities will be certified weed-free.

In the overall Trail area, ongoing management would treat areas infested by invasive and noxious weeds to prevent the spread of weeds. A comprehensive monitoring program would track the spread and establishment of noxious weeds and invasive species within the project area, and follow up on areas previously treated for noxious weeds for at least the first three years after project implementation and at three-year increments thereafter. Trail users would also be educated about the spread of noxious and invasive weeds through the Trail education program.

Reviewed by: _____ 5/9/2007

Bonnie Waggoner Date
Ely District Noxious & Invasive Weeds Coordinator